INDUSTRIAL EQUIPMENT NEWS

NOVEMBER - 1951
VOL. 19 • NO. 11

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN - 10969 if you write the maker

CONVEYING . . Elevating section applies between two conveyor levels

Source: CONVEYOR SPECIALTY CO.
31-35 Newport Ave., North Quincy 71, Mass.

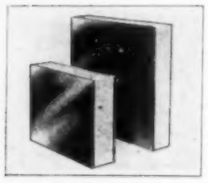
Up, over and down

Motor-driven car rides between upper and lower levels in vertically reciprocating action under control of limit switches in this new roller-conveyor elevating section. The car will receive loads at either the upper or the lower level and will move them down or up without need for operator attention. The unit can apply between two floors or can lift a conveyor run to move over an aisle when two of the sections are joined with a section of bridging conveyor. Sizes and operating characteristics are subject to specification.

BREVITY—Identify by IEN - 10970 if you write the maker

ELECTRIC CIRCUITS . . Conductor bonded to plastic, one or both faces

Source: UNITED STATES GASKET CO.
658 No. 10th St., Camden 1, N. J.



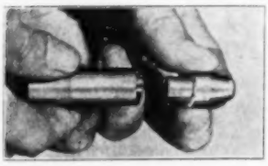
Any specified metal

Chemelec Multi-Bond is a further development of the Teflon-metal sealing units previously described IEN-9907-51. The new sheet material is offered by the company's Fluorocarbon Products Division with the metal conductor bonded to one or both faces of Teflon, Kel-F and similar plastics. Four standard sheet sizes range from 8 by 8 in. to 36 by 36 inches. Primary application is to fabricate moisture-proof printed circuits for electronic equipment and for other uses requiring a dielectric material with a metal face.

BREVITY—Identify by IEN - 10971 if you write the maker

WELDING . . Spot weld electrode has expendable cap on adapter shank

Source: FANSTEEL METALLURGICAL CORP.
2204 Sheridan Road, North Chicago, Ill.



Ask for Bulletin 14.100

Kaptrode trade names a new spot-weld electrode in which an expendable cap fits into a semi-permanent adapter shank. The shank, in turn, is supplied for use in any standard Morse taper-type electrode holder. When the cap has been worn down too far for further use it can be removed and a new one put in its place.

The adapter shank is available in two Morse taper sizes and in nine lengths ranging in ¼-in. steps from 1¼ to 3¼ inches. Other lengths are available to specification. The cap projects ¾ in. from the shank and is made in six nose styles including pointed, dome, flat, off-set, truncated cone and radius face. Three RWMA alloys are classes 1, 2 and 3.

A worn electrode is removed with an extractor tool that the company can supply. Tests made under ordinary operating conditions indicate one adapter shank outlasts ten electrodes.

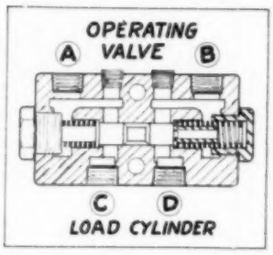
NEEDED FOR STEEL:

3,000,000 TON OF SCRAP PER MONTH

BREVITY—Identify by IEN - 10972 if you write the maker

VALVE . . Flow regulator throttles overhauling in hydraulic line

Source: HYDRAULIC EQUIPMENT CO.
1102 E. 222nd St., Cleveland 17, Ohio



Holds over-running load

Overhauling action in which a load on a hydraulic piston tends to crowd the piston ahead of incoming pressure flow is prevented by this new Model-450 regulating valve. The control action prevents cavitation on the incoming side with possible loss of load control. The valve is particularly suited for equipment such as cranes, road graders, lift trucks in which a cylinder is employed to raise a load and lower it. The control action is required primarily in lowering direction but the new valve is bi-directional design.

Operating ports for alternate pressure and return on a 4-way operating valve are connected to ports A and B in the new valve. Ports C and D on the opposite side of the valve are connected to the two ends of a double-acting cylinder that is to handle a load. When the operating valve is moved to apply pressure on either side the incoming flow acts against one end of a centrally-located plunger backed by springs at both ends. This pressure must compress one spring and move the plunger until the port is opened for flow to the cylinder. At the same time the plunger opens the return port to permit oil to escape from the opposite end of the piston and flow back to the oil reservoir through the operating valve.

If the load tends to overhaul and move the piston ahead of the incoming flow it will decrease pressure at this end and the spring-balanced valve will move toward the closed position. This will throttle the outlet side slowing the load piston down until balance is restored. The valve is available in a range of capacities to 25 gpm. at 1,000 lb. and in one housing size with ½ or ¾-in. ports.

BREVITY—Identify by IEN - 10973 if you write the maker

PHOTOGRAPHING . . High speed camera films object and oscilloscope screen

Source: EASTMAN KODAK CO.
341-45 State St., Rochester 4, N. Y.

Complete research unit $2,139

A second lens is now available in assembly on the company's high-speed camera to permit photographing the action of electrical-mechanical devices. It will show, on one film in superimposed position, the mechanical action and the electrical action as reflected by the image in an oscilloscope screen. The second lens is focused on the screen to expose the trace there shown through the back of the film simultaneously with exposure of the mechanical action at the front.

The resulting record presents a complete picture of the behavior of the device and permits correlation with strain, acceleration, vibration and other signals fed to the oscilloscope in many non-electrical problems. The film speed as indicated by the edge-marking argon lamp, standard in the camera, provides a time base for reference.

The entire trace from the top to the bottom of the picture frame represents a time interval that is five times the picture-exposure time. On any given picture frame the mid-point, top to bottom of the trace, coincides with the mid-point of the exposure time of the picture image. The trace can be placed at any desired position within the width of the picture field so it will not conflict with the object being photographed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

PRODUCT INFORMATION IS MORE VITAL NOW THAN EVER

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 104 and 105 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

•

From a Methods Engineer

"We like IEN's columns listing the latest literature on methods and equipment. Our congratulations on selection of subjects and method of presenting them."

•

Departments

READER SERVICE FORM — Pages 16-17 and 104-105
To assist you in securing the information you want

SUBJECT INDEX — Pages 117-119
With our four-step suggestion on how to use it

GIANT OPEN HOUSE — Page 4
Example of how to promote good industry relations

NEWS NOTES — Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE — Page 78
Condensed reviews of current manufacturers' catalogs

IDEAS FOR YOU — Page 61
Items of current news interest to keep you posted

"I WISH I HAD" — Page 120
Requests we cannot answer, printed in the hope you can

•

Our Selections in This Issue

ABRASIVES — Page 24
Booklet tells how to use them in tumbling parts

CERAMIC — Page 2
Pressed, extruded, cast; expansion is zero or nearly so

COUNTING — Page 51
Cycle repeater operates switch on predetermined count

DRAFTING — Page 107
Tracer linkage turns drawing into isometric projection

GEAR CUTTING — Page 70
Hobbing machine operates in automatic high speed cycle

HEATING — Page 26
Color sound film shows uses for induction heating

LIGHTING — Page 94
Luminous ceiling is free from glare and absorbs sound

METAL TREATING — Page 7
Material forms phosphate lubricant base on steel

PAINTING — Page 49
Protective coating for surfaces subject to 2,500 deg. F.

PLASTIC — Page 29
Polyvinyl chloride in rigid bars, powder, sheet, tube

PULVERIZING — Page 9
Jet equipment reduces material into a fine powder

TRUCKS — Page 32
How to analyze your present material handling methods

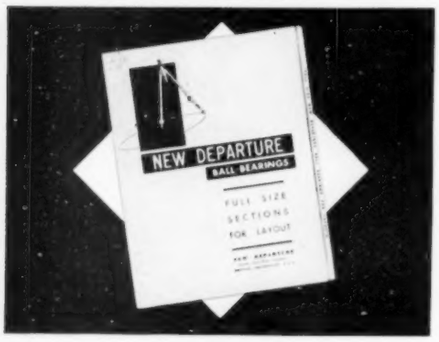
W. E. Smith, Editor & V. Pres.
F. Morr. Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

HELP TO CONSERVE PAPER
MAKE THIS ISSUE DO DOUBLE WORK
FILL IN AND SEND ALONG TO OTHERS
INTERESTED IN PRODUCT INFORMATION

- ☐ *Plant Operating Mr.* _____
- ☐ *Production Mr.* _____
- ☐ *Engineering Mr.* _____
- ☐ *Product Design Mr.* _____
- ☐ *Purchasing Mr.* _____
- ☐ _____

BREVITY—Identify by IEN - 10974 If you write the maker



Another Aid for You Designers

FULL SIZE SECTIONS FOR LAYOUT

Every type and size of New Departure ball bearing is included in this helpful kit.

Full size sections are printed on loose sheets for quickly working them into new designs. It's just one of the many features of our engineering service. Ask for booklet LF. New Departure, Bristol, Connecticut.

Nothing Rolls Like a Ball . . .

NEW DEPARTURE

BALL BEARINGS

BREVITY—Identify by IEN - 10975 If you write the maker

FREE! 32-PAGE HANDBOOK

SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.

Technical Coatings Since 1896

Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 10976 If you write the maker

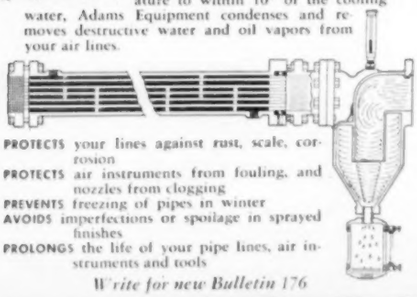
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion

PROTECTS air instruments from fouling, and nozzles from clogging

PREVENTS freezing of pipes in winter

AVOIDS imperfections or spoilage in sprayed finishes

PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 10977 If you write the maker

CERAMIC . . Pressed, extruded, cast, expansion is zero or nearly so

Source: STUPAKOFF CERAMIC & MFG. CO. 44 Cooperstown Road, Latrobe, Pa.

Thermal shock can't harm it

Stupalith trade names a new series of ceramic materials characterized by excellent ability to withstand thermal shock, primarily because of low coefficient of expansion. Two principal types have no thermal expansion or near zero on either the plus or minus side. A sample heated to 2,000 deg. F. and plunged into liquid air in 100 repeat cycles was apparently not affected.

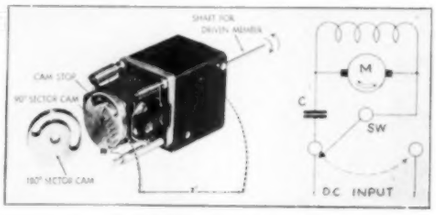
Applications include containers for pickling, kiln furniture, parts subject to high temperature as in induction heating, jigs, wire-wound coil forms, furnace liners, thermostat core rod. Parts made from the material that has no expansion can be used for plug and ring gages, mirrors, turbine blades, combustion parts in engines, nozzle inserts.

Manufacture is by casting, extruding, pressing, ramming. Tiny parts weighing a fraction of an ounce as well as those weighing several pounds can be made without difficulty. The material is fired after forming. Then it can be machined or ground to precise dimensions. The final parts remain serviceable at temperatures to 2,400 deg. F.

BREVITY—Identify by IEN - 10978 If you write the maker

DRIVE . . Reversing motor, rotary reciprocation to 330 degrees

Source: GENERAL PRECISION LABORATORY INC. 61-65 Bedford Road, Dept. 2, Pleasantville, N. Y.



No holding current needed

New assembly of miniature motor, charging capacitor and a single-pole double-throw switch operated by a sector cam on the motor shaft provide a means for rapid reciprocation of the motor's output shaft through a required angle maximum at 330 degrees. The unit provides the drive for equipment such as microwave switches and phase shifters with reciprocation to 10 cycles per second.

The switch is actuated by the cam for alternate charge and discharge of the condenser to provide the pulse type actuation for the motor in connection with over-center cam-spring action. Input voltage, capacitor size, characteristics of the motor, spring tension and cam angle are all engineered to meet specific requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 10979 If you write the maker

FOR EASY SHIFTING OF HEAVY EQUIPMENT

DUFF-NORTON

Traversing Bases

Heavy machinery and equipment can be shifted with ease by means of Duff-Norton Traversing Bases. Used with or without screw and ratchet type jacks, loads can be moved horizontally up to 26". You should have a set of these bases in your plant. Investigate the savings they make possible.

HOLDS AND MOVES LOADS UP TO 100 TONS

IN EITHER DIRECTION

Write today for Bulletin AD-40.

THE DUFF-NORTON MANUFACTURING CO.

Main Plant and General Offices: PITTSBURGH 30, PA.—Canadian Plant: TORONTO 6, ONT.

"The House that Jacks Built"

BREVITY—Identify by IEN - 10980 If you write the maker

DOUBLE SAVINGS ON SMALL PARTS MILLING!

Atlas MILLING MACHINE

- ★ Timken Bearing Spindle
- ★ Backgeared Power
- ★ Complete V-Belt Drive
- ★ 8 Spindle Speeds
- ★ 4½" x 18" Ground Table
- ★ Reversible Automatic Power Longitudinal Feed

1. Low initial cost. 2. Low operating costs.

The Atlas miller frees larger machines from uneconomical handling of small jobs. Saves many hours monthly on set-ups — saves on power and operating costs.

It handles the full range of operations, mills to close tolerances fast and efficiently — as dependably as larger machines.

Send today for detailed catalog. Here's real help — available promptly — for your tool room or production line.

For your Atlas

ATLAS PRESS CO. 1191 PITCHER ST. KALAMAZOO, MICH.

BREVITY—Identify by IEN - 10981 If you write the maker

FAST

Pull the trigger of this Kidde CO_2 Extinguisher. Flame-smothering CO_2 kills fire in seconds. No mess. No fumes. Write for free literature.

Walter Kidde & Company, Inc.
1136 Main Street, Belleville 9, N. J.

Kidde

BREVITY—Identify by IEN - 10982 If you write the maker

Valuable information for YOU...

This Bulletin tells you how to use the Easy-Flo and Sil-Flo Preplacement Formula to get any brazing production you need!

WRITE FOR A FREE COPY—TODAY
ASK FOR BRAZING NEWS No. 54

HANDY & HARMAN 82 Fulton St. New York 38, N. Y.

Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

▼ BREVITY—Identify by IEN - 10983 if you write the maker ▼

CONSERVE weight
PRESERVE surface finishes
OBSERVE reduced costs
with
Rigidized Metals
. . . and get

Write on your company letterhead for a copy of the RIGIDIZED METALS CONSERVATION HANDBOOK Today

Rigidized Metals Corporation
66411 OHIO STREET, BUFFALO 3, N. Y.

▼ BREVITY—Identify by IEN - 10984 if you write the maker ▼

a good appliance deserves the BEST CORD

SECURITYFLEX
portable cord

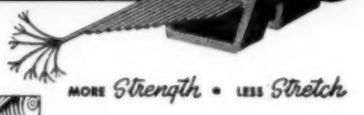
Tough, dependable — resistant to oil, water, abrasion, age, ozone — SECURITYFLEX* Portable Cord is a reliable partner for any electrical appliance. So rugged it's used on mine drills.

Resists kinking. Flexes indefinitely. Don't risk your product's performance by using poor cord. SECURITYFLEX is made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

the right cable for the job
ANACONDA® Wire and Cable

▼ BREVITY—Identify by IEN - 10985 if you write the maker ▼

BROWNING STEEL CABLE GRIPBELTS



MORE Strength • LESS Stretch

Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

Write FOR LIST PRICE SHEET V-163-A

BROWNING MANUFACTURING CO.
INCORPORATED
MAYSVILLE, KENTUCKY

▼ BREVITY—Identify by IEN - 10986 if you write the maker ▼

RECORD KEEPING . . Chart holders for use in quality control operations

Source: VISI-TROL CORP.
21458-62 W. 8-Mile Road, Detroit 19, Mich.

For inspectors and operators

Type A, to the left, in which records are marked with a grease pencil on an acetate window in front of a guide chart, and Type B, containing permanent charts back of a window-equipped door, are new units for use in a plant to assist in quality control work. Both cabinets have steel frames and ½-in. plywood backing. Several standard sizes are available to hold the charts in groups of 1 to 3 per unit. A visual signal can be attached to either one as illustrated to the left.

▼ BREVITY—Identify by IEN - 10987 if you write the maker ▼

MARKING . . Fluorescent chalk available in six radiating colors

Source: NORCO PRODUCTS MFG. CO.
392 Bleecker St., Dept. IE, New York 14, N. Y.

Available in six colors

Blacklight designates a new chalk that can be employed to write on any ordinary blackboard and to be erased in the same manner as ordinary chalk. It makes a mark that will glow brightly when exposed to ultra-violet light.

The chalk is particularly suited for use where light levels are low. It produces a novel effect as though the user were "writing with light" upon the blackboard.

▼ BREVITY—Identify by IEN - 10988 if you write the maker ▼

SEALING . . One piece piston ring, inward curved integral closing finger

Source: SAFETY SEAL PISTON RING CO.
P. O. Box 106-A, Fort Worth 1, Texas

Design is patented

Cylinder scoring is prevented by the inward curved end of the closing finger in this new single-piece piston ring. The curved shoulder acts to balance inward and outward pressures as the finger rides in the recess in the matching end. The ring does not close up further than the beginning of the curve in the recess portion when it is in place in a cylinder. Sizes are from 1 to 30 in. in diameter in plain and oil types for stationary and mobile equipment in a range of applications.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 10989 if you write the maker ▼

SAFETY EQUIPMENT FOR ALL INDUSTRIES

SAFE STORAGE FOR EXCELSIOR AND OTHER INFLAMMABLE MATERIALS

IPCO SAFETY STORAGE BINS

For shipping and receiving rooms and other plant areas where excelsior, paper, rags, paint and other combustibles are used.

Sturdily manufactured of heavy gauge galvanized iron with reinforced angle corners. Fitted with fusible link so cover is allowed to close automatically in case of fire.

Meet all fire regulations of Insurance Companies, State and Municipal authorities.

SIZES
20" W x 35" L x 33" H
21" W x 48" L x 37" H
24" W x 58" L x 37" H

Write for Bulletin F-111

IPCO Safety Equipment for all Industries
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

▼ BREVITY—Identify by IEN - 10990 if you write the maker ▼

LUBRICATION ECONOMY

"LUBRIPLATE saved us $2,098.16 in seven months"

The BROWN COMPANY, Quality Paper Makers of Berlin, New Hampshire, said this in an operating report on one of their Kraft Mill Lime Kilns after changing over from conventional oil lubrication to LUBRIPLATE No. 130AA. Huge savings like this cannot be overlooked. It is worth your while to see what LUBRIPLATE Lubrication can save you.

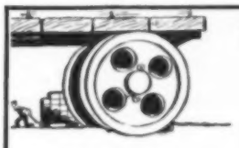
1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

JAN. 14-17-1952
3RD PLANT MAINTENANCE SHOW
PHILADELPHIA CONVENTION HALL

LUBRIPLATE DIVISION
Fiske Brothers Refining Co., Newark 5, N. J.•Toledo 5, O.
DEALERS EVERYWHERE, consult your Classified Telephone Book

▼ BREVITY—Identify by IEN - 10991 if you write the maker ▼



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION
Offices: Abilene, Tex. • Albany, N. Y. • Bethlehem, Pa. • Birmingham • Boston Chicago • Dallas • Houston • Indianapolis • Kansas City, Mo. • New Orleans New York • Norfolk • Philadelphia • Richmond • St. Louis • Washington, D. C.

▼ BREVITY—Identify by IEN - 10992 if you write the maker ▼

NORMA-HOFFMANN Precision BEARINGS

A TYPE AND SIZE FOR MOST APPLICATIONS

No matter what your bearing requirement . . . for electric motors, machine tools, business machines, instruments or household appliances . . . Norma-Hoffmann can give you the right bearing for your particular application. These *Norma-Hoffmann precision bearings*, ball or roller, will improve product performance with efficient friction-free operation. Their built-in ability to operate dependably under every load, speed and duty means you get long life with minimum maintenance. 108 distinct series from ⅛" to 21" bore gives you a wide range of choice. Write for catalog.

NORMA-HOFFMANN BEARINGS CORPORATION
Precision Ball, Roller and Thrust Bearings
STAMFORD, CONNECTICUT

BREVITY—Identify by IEN - 10993 if you write the maker

WHAT ABOUT STRESS RAISERS?

This book gives the answers..

How to avoid the localized stresses which start failure is a basic problem of design. This 72 page booklet analyzes many good and bad features of design. It also deals with problems of steel selection and treatment from the viewpoint of the design engineer—instead of the metallurgist.

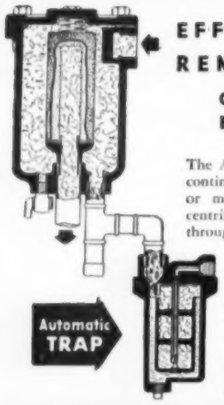
Write for "3 Keys to Satisfaction"—it is free.

This booklet sent to you FREE

Climax Molybdenum Company
500 Fifth Avenue · New York City

BREVITY—Identify by IEN - 10994 if you write the maker

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

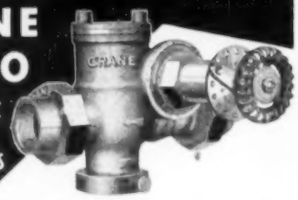
R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 10995 if you write the maker

POSITIVE PROTECTION
AGAINST PRESSURE BUILD-UP

CRANE
no. 960
AUTOMATIC
PRESSURE
REGULATORS



Crane Brass Regulators not only reduce pressure, they hold it at the desired point regardless of moderate fluctuations in inlet pressure. Even when outlet steam and air are not being used, outlet pressure cannot build up to inlet pressure.

Once installed, Crane No. 960 Regulators work automatically . . require only periodic inspection and cleaning. All working parts are easily renewable. Piston operates in removable liner. Any wear is on liner—not on body walls.

Made for initial inlet pressures up to 250 pounds steam or air, in four outlet pressure ranges: 1 to 10, 5 to 30, 20 to 100, or 90 to 200 pounds. Sizes up to 2 in. For complete information, SEND FOR FOLDER AD-1607A.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

EVERYTHING FOR EVERY PIPING SYSTEM

CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

INDUSTRIAL EQUIPMENT NEWS

ECA · The Original IEN Founded 1922 · NDP

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What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 NOVEMBER, 1951 No. 11

Giant Open House

The Cuyahoga Valley is a major industrial district in Cleveland, Ohio. Manufacturers large and small, refineries, steel mills, processors, transportation yards and docks line the river.

The Cleveland Press, Scripps-Howard newspaper in Cleveland, maintains a Public Service Bureau. John C. Robbins, Jr. is Director. He and seventy-five industrial outfits in the Valley put their heads together, came out with a public service venture, put it into action over two week-ends in September.

We tell you about it by quoting from items in the Press. It concerns the Cuyahoga Valley Trips. Listen—

Tuesday, September 11—"You'll never see a busier place when you come to the Valley the next two Saturdays and Sundays. Steel companies are in the midst of the biggest expansion in their history . . chemical, petroleum, paint, shipping companies are breaking all records . . everybody's working at top speed.

"Plan now to put your family in the car and come on down. We have the roads marked out. You'll get maps to show you where to go. It's to be an open house."

Friday, September 14—"Big yellow and black signs are beginning to pop up on one factory after another. They are an invitation to you and your whole family to take a look . . for the sand that feels like water in the Standard Oil of Ohio exhibit tent, for the slag pouring from ladles at American Steel and Wire, for the cracker that breaks up scrap at Republic Steel, for your free box of Sapphire biscuit mix at Montana Flour Mills, for the descaling machine at Star Fish Company, for the B and O diesel locomotive and for the New York Central bus that travels interchangeably on track and road."

Monday, September 17—"Thousands of men, women and children swarmed through the Valley yesterday to see the biggest industrial show Cleveland ever put on. If the weather is as good next Saturday and Sunday it is estimated that the crowds will reach 50,000.

"Visitors started coming at 9 a.m. They ran out of guides at Du Pont. More than 1,500 persons went through the Montana Flour Mills. Burks Oakley and his father put on engineer caps in the big locomotive and pretended they were going way out to San Francisco.

"Mr. and Mrs. Casmir Jaros and their three children were among the visitors at American Box Company. Her husband works at Jones & Laughlin in the Valley.

" 'Why, these trips are a good way to educate our children and ourselves also,' said Mrs. Jaros."

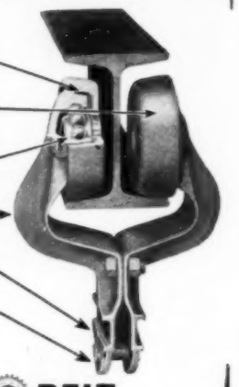
Just suppose it were possible to organize similar trips to every industrial district in these United States in the next twelve months. Many thousands of families like the Jaros could be shown how industry actually works. They could watch the operations in plants both large and small. They could learn some of the fundamentals, see some of the problems that industry must face to keep the wheels turning, to find satisfactory answers for the problems of labor and costs and taxes and growing materials shortages. They could realize, perhaps for the first time, that many things they have heard about industry are subject to revision.

They could witness just a few of the miracles, and they are just that, wrought when free men and women work for the rewards that accompany good performance under free enterprise. They could see real reasons to cast their free votes come next November.

W. E. Irish.

BREVITY—Identify by IEN - 10996 if you write the maker

Important points to look for when you buy trolleys
You get them all when you buy Link-Belt



Effective sealing of wheel and bracket keeps out dust and dirt.

Wheels are drop-forged, internally machined to extremely close tolerances.

Raceways are induction hardened. High load capacity is based on entire assembly — not just on bearing.

Rugged, one-piece bracket and clevis are drop-forged and heat-treated—fewer parts to maintain.

Trolley can replace other makes without disturbing chain's operating position.

Clevis pins are locked in bracket, cannot rotate. Bracket wear is minimized.

Write for Folder 2241-B.

LINK-BELT

LINK-BELT COMPANY: Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8.

BREVITY—Identify by IEN - 10997 if you write the maker

Here's **WHY!**

FOR LASTING SERVICE
AND LOW MAINTENANCE
SPECIFY

- Pillow Blocks
- Take-up Units
- Flange Units
- Cartridge Units
- Flange Cartridge Units

SEALMASTER
BALL BEARING UNITS

Only **SEALMASTERS combine these features:**

Permanent Seal—Patented centrifugal seals exclude dirt and retain lubricant.

Self-Aligning—Misalignment of shaft in any direction cannot distort the seals.

No Housing Wear—Patented locking pin prevents rotation of outer race—positions unit for relubrication.

Pre-Lubricated—Each SealMaster is shipped with lubricant sealed in—ready for use.

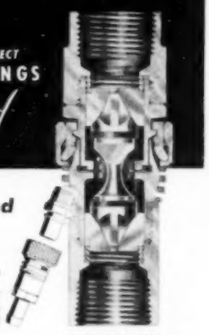
Write today for a copy of Catalog No. 845

BEARING DIVISION
STEPHEN S-ADAMSON MFG. CO.
151 RIDGEWAY AVENUE AURORA, ILLINOIS · LOS ANGELES CALIF. · BELLEVILLE, ONT.

Factory Representatives and Dealers in All Principal Cities

BREVITY—Identify by IEN - 10998 if you write the maker

HERE'S *Why*
WIGGINS QUICK DISCONNECT
INST-O-MATIC COUPLINGS
are *preferred*



TEST No. 1 **FLOW** *Increased*
20%

At 10 lbs. pressure, the ¼" Inst-O-Matic P1700 coupling delivers 483 cu. inches per minute, as compared with delivery of 404 cu. inches per minute through another make.

CAN YOU USE *quick disconnect* Couplings?

Write for name of nearest representative today.

Wiggins

INST-O-MATIC COUPLINGS

Let Wiggins engineers apply their experience to your requirements.

E. B. WIGGINS OIL TOOL CO., Inc.,
3424 E. Olympic Boulevard, Los Angeles 23, Calif.

▼ BREVITY—Identify by IEN - 10999 If you write the maker ▼

NOW ONE UNIVERSAL JOINT For HIGH-load, HIGH-static torque Drives

Highest grade, heat-treated alloy steel for greater strength.

Ground to infinite degree of accuracy. No binding, backlash or inplay of pins. Concentricity guaranteed within .0005. Exceed Armed Forces rigid requirements.

13 SIZES—Bores ¼" to 2". Overall length to 10⅝".

Write for fully descriptive literature.

LOVEJOY FLEXIBLE COUPLING CO.

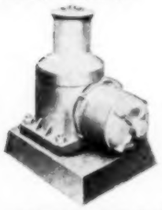
5014 W. Lake Street — Chicago 44, Illinois

Mfrs. of Lovejoy Flexible Couplings and Variable Speed Controls

▼ BREVITY—Identify by IEN - 11000 If you write the maker ▼

S-A Car Pullers

Save Time, Cut Costs



If you have your own switch track, you can use an S-A Car Puller. No need to use a gang of men or wait for a switch engine. *One man can shift or spot up to six loaded cars under normal conditions.* Powerful capstan will also pull or lift other heavy loads at 45 feet per minute.

Write for bulletin 1339

STEPHEN S-A ADAMSON MFG. CO.

Tellevel Bin Level Controls • Car Loaders — SACO Speed Reducers • Car Pullers • Winches

SealMaster Ball Bearings

7 Ridgeway Ave., Aurora, Illinois

▼ BREVITY—Identify by IEN - 11001 If you write the maker ▼

Use 'Bestolife

No matter what kind of connection you have, 'Bestolife will set it up snugger, tighter and longer than any compound you have ever used—or your money back. On air, gas, or fluid lines—at any pressure—at any temperature, 'Bestolife has been doing a top job for twenty years. Try it. See your supply dealer or write for literature and prices.

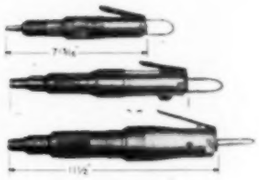
JOBBERS AND DEALERS WANTED

I. H. GRANCELL
1601 EAST MADEAU STREET
LOS ANGELES 1, CALIFORNIA

▼ BREVITY—Identify by IEN - 11002 If you write the maker ▼

SCREW DRIVING . . Pneumatic tool equipped with adjustable torque clutch

Source: INGERSOLL RAND CO.
11 Broadway, Dept. NR, New York 4, N. Y.



Ask for Bulletin 5056

Series 000, for screws to No. 8 free-running or No. 5 self-tapping, is the smallest of three assemblies of the company's new air-operated screw driver. Series 0 is the largest with capacity for 5/16-in. free-running or ¼-in. self-tapping screws. Reversible and non-reversible models are available in each series. The two larger sizes can be had with straight or pistol-grip handles.

The driving bit in the nose of the tool is surrounded by a spring-backed sleeve. When light axial pressure is applied on this sleeve, it retracts into the housing to engage the driving clutch. The screw is then rotated until it has been seated or unexpected resistance is met. In either case a ball-type release clutch prevents over-tightening. This clutch can be adjusted to hold a desired torque.

▼ BREVITY—Identify by IEN - 11003 If you write the maker ▼

HANDLING . . Plastic compound to align and hold work parts together

Source: EUTECTIC WELDING ALLOYS CORP.
40-40 172nd St., Dept. P., Flushing 58, N. Y.

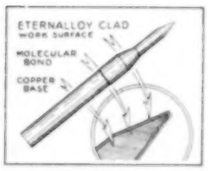
List price
$1.25 per pound

Form-A-Jig is a new plastic material supplied in 5 and 50-lb. containers. It is employed in a manner similar to putty to align work parts on which operations are to be performed. Assembly of the two parts of a broken drill for braze repair is an example. The material will not deform, move or swell in the presence of heat, as in welding. It can be applied quickly. It is suited particularly for work in which there is no time to make a jig or for which a jig is not justified.

▼ BREVITY—Identify by IEN - 11004 If you write the maker ▼

SOLDERING . . Copper tips for irons are electro clad for long service life

Source: ELECTRO-LAB PROCESSES
3564-68 Colerain Ave., Cincinnati 23, Ohio



Ask for test sample

Soldering iron tips are now available in specified sizes with an electro-deposited cladding, known as Eternalloy, to enable the tip to stand up for long periods in service on the order of 100 to 300 hours. In addition to the new tips, the company is prepared to clad soldering-iron tips sent to it for this purpose and to reclad customer-supplied tips as required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 11005 If you write the maker ▼

TROMBETTA SOLENOID CO.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-373 SHOE BRAKE
10" WHEEL, 5" FACE, 450 FT.-LBS.

SB-300 LINE OF BRAKES
TORQUE 3 TO 16500 FT.-LBS.

B-100 LINE OF DISK BRAKES
TORQUE 10 TO 25000 FT.-LBS.

EIGHT LINES OF SOLENOIDS
RECIPROMOTORS AND SEMOTORS

▼ BREVITY—Identify by IEN - 11006 If you write the maker ▼

THE HEAVY DUTY BLOWER-TYPE SPACE HEATERS for PORTABLE or PERMANENT COMFORT HEATING

For complete data on Space Heating electrically for your needs.
WRITE FOR CATALOG 10

Now it's easy to heat the smallest office or largest shop to a comfortable level in coldest weather with Chromalox Electric Unit Heaters. Units are available for portable use or permanent mounting to walls and ceiling, and only Chromalox gives you famous Chromalox Heating Elements. Motor driven fans assure positive air circulation which eliminates cold spots. On larger models, ducts can be used to convey heated air to desired areas. Automatic thermal cutouts assure protection against overheating.

SB-10

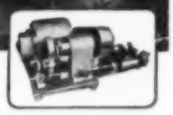
Industrial Div., Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See *Chromalox Radiant Heaters, Advertisement, Page 11*

CHROMALOX
ELECTRIC HEATING AT ITS BEST!

▼ BREVITY—Identify by IEN - 11007 If you write the maker ▼

PINES END-FINISHING MACHINES

Handle broad range of rod, tube, and pipe end-finishing work with speed and precision. Exclusive chuck feature clamps and feeds work to cutters in one motion. Operator always has one hand free for stock handling. Designed with quick interchangeable tool holders and chuck inserts, 8-speed sheave — 760 to 3920 r.p.m., hardened and ground spindle, grease-sealed precision bearings. Automatic swing-type stock stop assures fast, accurate positioning. Entire unit is portable, takes up small space, handles stock diameters up to 2". Max. feed is 1¼". Larger sizes up to 5" capacity available. **Typical production:** 800 tube ends per hour.



(Above) Pines 2" High Production End Finishing Machine equipped with foot-controlled air operating cylinder. Clamp, feed, and return cycle is automatic. Operator has both hands free for stock handling, supplied similar to hand-operated unit.

Write for Free Bulletin
Write today for free bulletin and learn how these machines are built to save time on a wide range of work.

PINES ENGINEERING CO. Inc.
Specialists in Tube Fabricating Equipment
630 WALNUT • AURORA, ILLINOIS

▼ BREVITY—Identify by IEN - 11008 If you write the maker ▼

ALLIS-CHALMERS COMBINATION STARTERS

SAVE SPACE... SPEED INSTALLATION!

When you need both a magnetic starter and a safety switch for a motor, select an Allis-Chalmers circuit breaker-type combination starter. A neat installation can be made quickly . . . starter and switch are factory wired in a single enclosure to save you time and space.

You get a starter that has silver-to-silver double break contacts, non-carbonizing arc chambers and easily accessible renewable parts. The circuit breaker gives short circuit protection . . . serves as a disconnect switch.

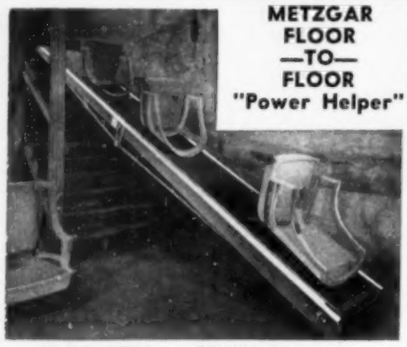
These combination starters are available in sizes 0 through 5 for motors from fractional to 200 hp, 110-550 v. With fusible or non-fusible disconnecting switches they are also available up through size 3.

There is an Allis-Chalmers starter for every motor need. Bulletin 14B7132 describes manual, magnetic, combination, and reversing starters for 110-550 volt motors. Contact your nearby A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3498

ALLIS-CHALMERS

BREVITY—Identify by IEN - 11009 If you write the maker



METZGAR FLOOR —TO— FLOOR "Power Helper"

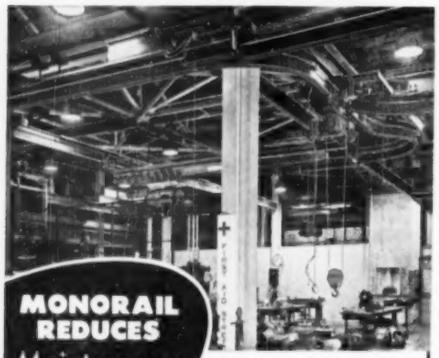
SAVED $3,044 Over Cost of Elevator

WRITE— for Suggestion. Give height, floor to floor and horizontal space available—Also maximum unit load.

- Maintenance — Zero
- Operating Cost — Negligible
- 500% Faster Loading & Unloading
- Safer than Elevator
- Flexible, with 2-way Controls
- Prompt Delivery — Easy Installation

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 11010 If you write the maker



MONORAIL REDUCES *Maintenance Costs*

American MonoRail Overhead Handling Equipment serves one of the country's largest maintenance shops. Included in the department are: machine shop, electrical repair, metalizing room, welding, painting and sand blast room, pipe shop, and inside and outside storage.

Let an American MonoRail engineer show you how you can cut handling costs and save valuable floor space. Please write us.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 11011 If you write the maker

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on: how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

INCLUDING 80-PAGE ALPHABETICAL SELECTOR, BOUND RIGHT IN THE BOOK, SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2
Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME _____ TITLE _____
FIRM NAME _____
MAILING ADDRESS _____
CITY _____ STATE _____
(Please print)

BREVITY—Identify by IEN - 11012 If you write the maker

FLOORS . . Folding steel dockboard and truck to place and remove it

Source: SUPERIOR RAILWAY PRODUCTS CORP. 510-14 Franklin Ave., Pittsburgh 21, Pa.

One man handles it easily

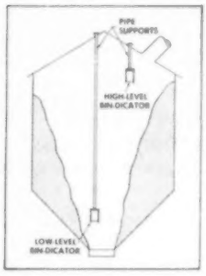
New design of the company's PAR dockboard, previously described IEN-7398-51, has load capacity of 5 ton as compared to the previous 4-ton limit. The new unit is known as Model 100-6A. It measures 48 in. in width by 60 in. in runway length and has a lip apron 4 in. from front to back. Rise on a 10 per cent grade is 6 inches.

The feature lies in ability of the unit to fold up for transportation on a two-wheel truck that is supplied for this purpose. It stores in an area measuring 1 by 4 ft. when it is not in use. An adjustable locking arm is part of the assembly. This arm hooks over a dock face while the lateral member underneath the leaf of the front piece acts as a check against the end of a truck bed. When one truck pulls out and another backs in only the front leaf need be raised.

BREVITY—Identify by IEN - 11013 If you write the maker

CONTROL . . Materials level unit suspends by pipe in a large bin

Source: BIN-DICATOR CO. 13944-48 Kercheval, Detroit 15, Mich.



Mounts near bin center

Model CS is a new assembly in the company's line of materials-level indicating and control units, previously described IEN-7629-48. The new design is intended for use in large bins in suspended installation from a 2-in. or smaller pipe at high and low level points. It supplements the wall-mounting assemblies previously developed but employs the same operating principle.

A diaphragm in the housing face is the actuating means for a single-pole double-throw Micro switch mounted inside the housing. This switch connects into signal or control circuit to indicate presence of the material at the installation level, to actuate filling or emptying equipment, to shut off feed before a machine can clog, to prevent overloading.

The switch rates 10 amp. on 110-volt ac. It can be wired single-pole, single-throw in normally-opened or normally-closed arrangement. Signaling and control leads can be brought out through the suspending pipe. Application is intended primarily for bins handling dry materials.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11014 If you write the maker

TRUSCON STEEL BOXES just say *"Truscon"...*

Truscon steel machines are interchangeable with the use of Truscon Steel Boxes and Skids.

and there's the *box* you need!

Truscon has scores of different types of steel boxes and skids to meet a wide range of materials handling requirements. And if your needs are something special, Truscon has the engineering ability to tailor-make the exact units you require. Truscon's long experience in steel box and skid design . . . Truscon's highly efficient facilities for production and service . . . Truscon's long association with box users in every branch of materials handling . . . these are *plus* features that make your dollar investment in Truscon Steel Boxes and Skids so much more profitable. Write for catalog.

TRUSCON STEEL COMPANY
PRESSED STEEL DIVISION • 4150 TRUSCON AVENUE • CLEVELAND 4, OHIO
SUBSIDIARY OF REPUBLIC STEEL CORPORATION

BREVITY—Identify by IEN - 11015 If you write the maker

New di-acro POWERSHEAR

offers CONTINUOUS ACTION *plus* VARIABLE SPEED from 30 to 200 strokes per minute

For high Speed

DIE-LESS DUPLICATING

The new Di-Acro POWERSHEAR has remarkable speed and accuracy for the production of small parts and pieces. Consider these points:

1. CONTINUOUS SHEARING ACTION—no clutch to engage! Feeding speed determines shearing speed. **2. VARIABLE SPEED**—cutting cycle quickly set for each shearing operation. **3. EASE OF OPERATION**—fatigue is reduced, accuracy increases, production soars. **4. "SINGLE STROKE" SHEARING**—non-repeating safety clutch for jobs not adaptable to continuous shearing.

Any plant doing high speed precision work on smaller parts from any shearable material cannot afford to be without the DI-ACRO POWERSHEAR. Available in 12" and 24" shearing widths, capacity 16 gauge sheet steel. Also standard model.

SEND FOR 40 PAGE "DIE-LESS DUPLICATING" CATALOG giving full details on Di-Acro Powershears, also Di-Acro Benders, Brakes, Rod Parters, Rollers, Notchers and Punches.

O'NEIL-IRWIN 318 8th Ave. Lake City, Minn.

NOTCHERS PUNCHES BENDERS BRAKES ROLLERS SHEARS ROD PARTERS

BREVITY—Identify by IEN - 11016 If you write the maker

New Safety! New Efficiency!

for ANY PULLING . . . PUSHING . . . LIFTING JOB

with the right **SIMPLEX HYDRAULIC EQUIPMENT**

Re-Mo-Trol PULLERS

Hydraulic Pumps and remote-controlled Rams for pulling wheels, gears, shafts, etc., also pushing and lifting in any direction from a distance. Safe, smooth, powerful. 10 to 100 ton capacity units. Unique Center-Hole simplifies rigging.

SIMPLEX JENNY

Self-contained Hydraulic Pullers with famous Center-Hole for easy pulling, pushing, lifting. Rugged, versatile; 6 models, 30 to 100 ton capacities.

SIMPLEX HYDRAULIC JACKS

Sturdy, safe, efficient units to do any lifting job easy and fast. 8 models, 3 to 100 ton capacities.

Get full information on the most complete industrial line of Hydraulic Jacking equipment; write for Bulletin Hydraulic 518.

Simplex LEVER • SCREW • HYDRAULIC **Jacks**

TEMPLETON, KENLY & CO.
1012 South Central Ave., Chicago 44, Ill.

BREVITY—Identify by IEN - 11017 If you write the maker

EYE LEVEL CHECK ON BOILER WATER LEVELS

Positive, constant check on boiler water levels is now possible at eye level—right on the instrument panel or other convenient location.

Yarway's Remote Liquid Level Indicator is always accurate because it's operated by the boiler water itself. No stuffing boxes. Indicating mechanism is never under pressure.

Ideal for indicating boiler water level, feed heater water level, superheater pressure differentials and tank levels. For complete description and operating details, write for Bulletin WG-1821.

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY
REMOTE LIQUID LEVEL INDICATOR

BREVITY—Identify by IEN - 11018 If you write the maker

LOW COST, ORGANIZED STORAGE SPACE

32-DRAWER (96 COMPARTMENTS) Metal Storage Units

CRYSTAL CLEAR OR MATCHING GRAY PLASTIC DRAWERS

MODEL J-32

$11.95 F.O.B. AKRON

15⅛" high 6" deep 12½" wide

HUNDREDS OF USES:

Useful in every shop, lab, office, stockroom, store, home, assembly line . . . in radio, TV, photographic and ignition work.

Orderly storage for small parts, bolts, nuts, drills, tools, carbide tips, buttons, thread, paper clips, labels, pins, rubber bands, stamps, films, photo supplies, negatives, fishing tackle, artist supplies, medical supplies, marine supplies, drugs, jewelry, etc. Safety catch ends accidental spilling, identify card drops into slot in drawer front.

Made in 6 sizes:

J-64	64 drawer	192 compartments	$21.37
J-32	32 drawer	96 compartments	11.95
J-24	24 drawer	72 compartments	10.25
J-16	16 drawer	48 compartments	7.29
J-12	12 drawer	36 compartments	5.63
J-8	8 drawer	24 compartments	4.08

SEND FOR FREE DESCRIPTIVE FOLDER

AKRO MILS, INC. P.O. BOX 989 AKRON 9, OHIO

BREVITY—Identify by IEN - 11019 If you write the maker

MACHINE LOADING, SCHEDULING, DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to plan Assured.

Readily Adapted . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc. and McCaskey Machine Control Boards.

Write today for your copy of illustrated Bulletin A-630 IEN containing all the facts.

The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 11020 If you write the maker

Stands Extreme Punishment on School Buses!

More proof that **PABCO MASTIPAVE** is the floor covering for YOU!

Listen to the President of Ward Body Works, bus builders of Conway, Arkansas, and Mexico City:

"Nothing on earth is more damaging to bus floors than feet of school children. To stand up, a most durable floor covering is needed. We install Mastipave and Grip-Tread in more than 1500 buses each season. With more than 3 years' service have found Mastipave and Grip-Tread in good condition and ready for several more years. It doesn't crack or wear out—you've got to wear it *off!*"

PABCO MASTIPAVE *in roll goods and tiles*

GRIP-TREAD *in roll goods only*

...Proved, for over 28 years—in schools, industries, hospitals, public buildings.

...Costs little, looks good, wears long.

...Worth investigating, for YOUR toughest job!

SEND NOW FOR THE FULL STORY OF MASTIPAVE

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME _____

ADDRESS _____

CITY _____ STATE _____

BREVITY—Identify by IEN - 11021 If you write the maker

STORING . . Microfilming equipment minimizes space needed for old records

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.

From papers to film

New design known as Dual Film-a-Record permits copying both sides of a document simultaneously or copying one side only on either 16 or 35-mm. film. The machine is a further development of the equipment previously described IEN-3320-47. As many as 500 checks or 125 ft. of paper can be photographed per minute with hand feed.

Material to be photographed is inserted through a 15-in. throat, the machine having capacity for printed areas to 14½ in. in width. These large size sheets can be copied on two sides at once using 35-mm. film on three reduction ratios of 37, 32 or 24 to 1. Ratio is selected by installing the correct size of lens in the permanently positioned camera.

The full width of a 16 or a 35-mm. film can be used or documents can be photographed down one-half of the film and up the other half. Two identical copies can be made simultaneously on duplicate rolls of 16 mm. film. Documents that have been photographed are returned at eye level in the same order as they were fed in. A counter records the number of photographs. A color device permits filming sheets of varying color with uniform clarity and background density.

The equipment is available alone or in connection with filing cabinets for the film and viewing equipment for projection and reproduction in full size.

BREVITY—Identify by IEN - 11022 If you write the maker

METAL TREATING . . Liquid material forms phosphate lubricant base on steel

Source: OCTAGON PROCESS INC.
22 Bank St., Staten Island 1, N. Y.

Particularly for ordnance units

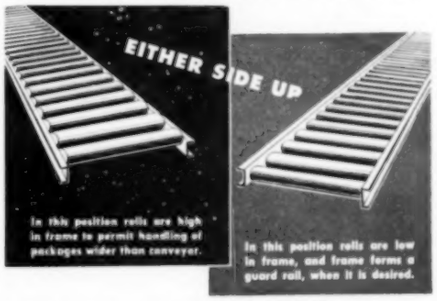
Equipment parts subject to corrosion in service, that also form sliding members in an assembly, can be treated in a process employing a new liquid known as Rustshield 2 to answer both problems. Application on the steel or iron surface produces phosphatizing action that makes the surface rust resistant and highly retentive to fluid lubricants.

Application is in an immersion process that includes precleaning of the work pieces with vapor degreaser, a safety solvent or an alkali cleaner such as the company's No. 400. This cleaning is followed by a rinse operation and then the work is immersed in a hot solution of the Rustshield held in a stainless steel tank. This is followed by rinsing and final treatment with a passivating agent such as Neutralyte solution.

Oil will penetrate into the microscopic surface. The process meets the requirements for phosphate coatings in USAO Specification 57-0-2C, Type II, Class A for phosphate coatings finished with non-drying petroleum oils containing corrosion inhibitors suitable for use on sliding or bearing surfaces.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11023 If you write the maker



A PRACTICAL FEATURE OF *Logan* STOCK ROLLER CONVEYOR

Above is shown one of the practical features of Logan Stock Roller Conveyor. Other features include (a) immediate shipment (b) available in several sizes (c) both straight and curved section can be furnished (d) both stationary and portable supports available. Write for literature.

Write or phone your requirements

Logan Conveyors

LOGAN CO., 290 CABEL ST. • LOUISVILLE 6, KY.

BREVITY—Identify by IEN - 11024 If you write the maker

FLOOD WATER? Micromax Controls May Help Solve pH Problems

When a river is contaminated by flood or chemical waste, or when anything else happens to upset the pH of a plant's raw-water supply, many mills find that Micromax pH Controllers are a big help in keeping the upset from reaching their finished water.

For, in an emergency as at all other times, a Micromax can free the water plant from an enormous amount of manual work, and at the same time give the manufacturing departments a clear well of far more uniform water than most operators can supply under manual control.

An L&N engineer will gladly supply technical information.

LEEDS & NORTHRUP COMPANY, 4901 STENTON AVE., PHILA. 44, PA.

LEEDS & NORTHRUP

MEASURING INSTRUMENTS TELEMETERS AUTOMATIC CONTROLS HEAT TREATING FURNACES

Jrl Ad N-96(4b)

BREVITY—Identify by IEN - 11025 If you write the maker

COST-CUTTING CARRIER

Rex TableTop Conveyor Chain is known throughout industry for cutting handling costs *three* ways. *First*, its original cost is low. *Second*, the wide bearing area of specially designed sprockets assures longer, trouble-free life. *Third*, its smooth, steady operation reduces spillage, breakage and jamming to the absolute minimum.

Rex TableTop is ideal for conveying bottles, cans, packages and small parts. Our booklet containing all the details has recently been revised. Send for your copy today.

REX CHAIN BELT COMPANY — DRIVE AND CONVEYOR CHAINS

50-120

Chain Belt Company
1675 W. Bruce St.
Milwaukee 4, Wis.

Please send me a copy of Bulletin 50-30.

Name.....

Company.....Dept.....

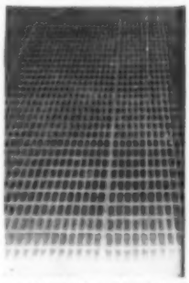
Address.....

City.....State.....

BREVITY—Identify by IEN - 11026 If you write the maker

FIRST EXAMINE . . . THEN SELECT THE GRATING WITH ALL

5 SUPERIOR FEATURES!



1. STRONG electroforged construction for easy installation.
2. MAXIMUM OPEN AREA for light and air.
3. EASY TO MAINTAIN . . . paint reaches entire surface.
4. SELF-CLEANING, no sharp corners to clog.
5. SAFE footing at all times with twisted cross bar.

Write for complete specifications

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg.
Pittsburgh 22, Pa.

BLAW-KNOX Electroforged® STEEL GRATING AND STAIR TREADS

BREVITY—Identify by IEN - 11027 If you write the maker

THOMAS TRUCK & CASTER CO.

207 Mississippi River
KEOKUK, IOWA

BREVITY—Identify by IEN - 11028 If you write the maker

Yes!...ONLY TRICO

"Powder-Packed"
RENEWABLE FUSES

PROVIDE:
- TAMPER-PROOF PROTECTION!
- NON-INTERCHANGEABLE LINK!
- REDUCED FUSE COSTS!
- SAFE TIME-LAG!
- THREE TIMES THE FUSE SERVICE!

- INCREASE PRODUCTION
- CUT MAINTENANCE COSTS

It's the CUSTOM-BUILT "Powder-Packed" element (a fuse within a fuse) that just can't be equalled in performance, safety and long service . . . "Powder-Packing" protects link against bending, twisting and fractures . . . chokes arc and hot flashes, absorbs explosive pressures, prevents damage to fuse casings, eliminates dangers of fire and accident hazards. TRICO renewal elements are inexpensive and quickly replaced . . . No need to return casing to factory for renewal.

TRICO KLIPLOK CLAMPS

For Fuse Clips
- Save Fuses
- Save Clips
- Save Power

Prevent arcing and heating at contacts, reduce premature fuse blowings, repairs and lost production.

WRITE FOR BUL. NO. 6

WRITE FOR BOOKLET 206-A

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

BREVITY—Identify by IEN - 11029 If you write the maker

DOWNS SAFETY GRABS ...GRIP ANYTHING!

FOR CRANES AND HOISTS...

Material lifting equipment will do more work—faster, easier—when you have the proper "grabs" for every type of load. No matter what your hoists are handling—pipe, rails, drums, plate or structural steel, stone, timber, boxes or odd-shaped objects of any description—there's a DOWNS *Safety* Grab that will enable you to do it faster, easier *and* safer. Learn new short cuts to greater efficiency for YOUR plant with DOWNS' *complete line* of *Safety* hoist grabs!

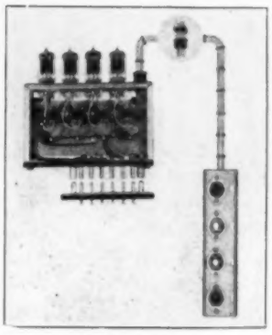
Write for Free Illustrated Catalog 200 Today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

BREVITY—Identify by IEN - 11030 If you write the maker

COUNTING . . Electronic decade totals pulses to 130,000 per second

Source: POTTER INSTRUMENT CO.
113-17 Cutter Mill Road, Great Neck, N. Y.



Easy to read from distance

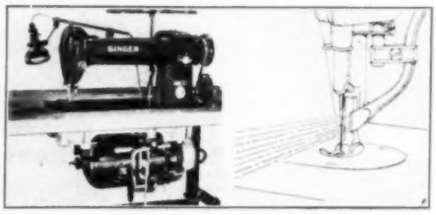
Model 12 for counting at rates to 130,000 per sec. and Model 13 for rates to 30,000 per sec. are new four-tube electronic decades in miniature design. Four neon glow lamps are arranged in 1-2-4-8 decimal coding. Each rates ¼ watt. The lamps are connected directly to the four counting stages so they also indicate when these stages are functioning correctly. The stages are arranged so progression of the count cannot skip over a stage in which the tube has failed to prevent a false count.

Dimensions are 6⅛ by 1⅛ by 6½ in. including the tubes. The assembly is equipped with a silver-plated connector. The decade can be supplied as a separate unit or as a part of a counting, timing or computing instrument built to specification. A remote panel-mounted four-lamp readout or a small plug-in neon cluster on the decade frame can be specified in which the indicators serve only for tube servicing.

BREVITY—Identify by IEN - 11031 If you write the maker

SEWING . . Blower attachment directs cooling air at machine needle

Source: SINGER SEWING MACHINE CO.
149 Broadway, Room 705, New York 6, N. Y.

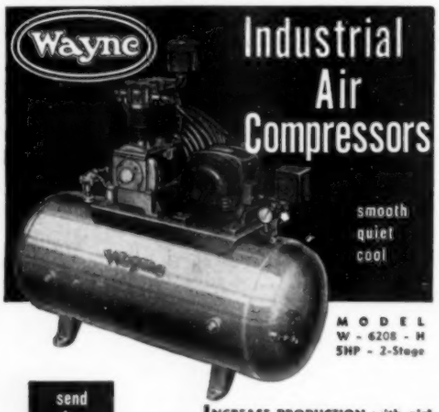


Synthetic thread needs cool needle

Heat fusing of the thread is eliminated when synthetic or combination synthetic and natural fiber thread is being used in a sewing machine by application of this new Needle Cooler. It is made up of a small blower that mounts on the machine drive to deliver air when the clutch is engaged. The air flows through a length of plastic tube to a nozzle directed at the needle. The cool air lowers the needle temperature to prolong its life as well as to prevent synthetic threads or synthetic materials from fusing. The air also carries dust and lint away from the operator. Three designs are available to meet service requirements. Application can be made on the company's machines now in use as well as on new ones.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11032 If you write the maker



send for CATALOG

INCREASE PRODUCTION with air! If your present source of air is overloaded install small units in each department needing air. Supplies air at higher pressures or saves running large machine when the department works overtime. Completely packaged units of power . . . Wayne Compressors are available from ½ H.P. to 10 H.P. Ask for catalog.

INDUSTRIAL LIFTS • HOSE REELS

THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO, CANADA

BREVITY—Identify by IEN - 11033 If you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 11034 If you write the maker

The Quick, Easy, Handy Way to TAP BY HAND

...Adapts for LATHE USE

THE DAHLSTROM TAP GUIDE virtually eliminates tap breakage—and saves those costly hours spent prying broken taps out of dies. Saves time, too. Just a few turns of the handle and the job is done.

Winds through continuously, with no backoff. Work is always dependably straight and square. Fasten it to a post or set it on top of a big job. This handy tapper comes equipped with 9 adapters, 8-32 to ¾" but taps are not furnished. Spindle can be pulled out and used in a lathe, or used as tap extension for hard-to-get-at-places. 13" x 8" x 14", wt. 32 lbs. Send for free pamphlet.

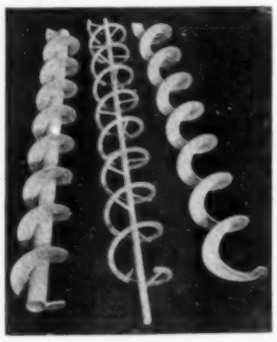
Also Makers of Dahlstrom Autostop and Tap Chuck

DAHLSTROM MFG. CO.
2516 W. Larpenteur
ST. PAUL 8, MINN.

Dahlstrom TAP GUIDE — 59.50 F. O. B. ST. PAUL

BREVITY—Identify by IEN - 11035 If you write the maker

WORMS AND SPIRALS
to bore, convey, extrude, feed, process



Let us make them for you to your specifications or supply them from stock in standard designs immediately

Send your blueprints for quotation

JAMES EAGEN & SONS
WEST WYOMING, PA.

BREVITY—identify by IEN - 11036 if you write the maker

SAVES UP TO 50% ON FASTENINGS IN LIGHT GAUGE SHEET METAL

The Original P-K Sheet Metal Screw

SKIPS
Tapping — Forms Own Threads

AVOIDS
Bolting
Riveting
Soldering

SAVES
Time and Trouble in Millions of Assemblies.

P-K TYPE A Hardened SELF-TAPPING SCREW

One of many types of Parker-Kalon Self-tapping Screws for faster, stronger metal and plastic assemblies. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
IF IT'S P-K® — IT'S O.K. — THE *ORIGINAL*
PARKER-KALON® SELF-TAPPING SCREWS
AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

BREVITY—identify by IEN - 11037 if you write the maker

Flexibility and Stamina Always Win!

The Universal Metal Hose team makes the goal every time in the conveyance of solids, liquids and gases at high and low temperatures and pressures.

This team, like any winning combination, has been developed to meet all requirements through training and experience.

Every member of the Universal Metal Hose team is designed to do a specific job for you. There's . . .

Braided Seamless Corrugated
Interlocked Asbestos Packed High Pressure
Interlocked Low Pressure—Packed and unpacked
Square Locked Conduit
and special types
in a wide range of metals and sizes.

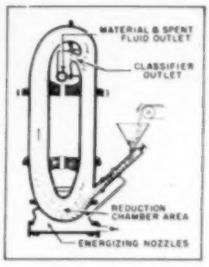
Universal Catalog U-101 offers you descriptive data on various types and applications of metal hose. Send for your copy today—and send along your specifications for recommendations without obligation.

UNIVERSAL METAL HOSE CO.
2131 S. Kedzie Avenue • Chicago 23, Illinois

BREVITY—identify by IEN - 11039 if you write the maker

PULVERIZING . . Jet equipment reduces materials to fine powders

Source: C. H. WHEELER MFG. CO.
1850 Sedgely Ave., Philadelphia 32, Pa.



Details on request

Improved design is announced for the company's fine-particle reduction mill together with a change in policy in which the mill can be purchased outright rather than leased as in the previous arrangement. Changes center in the classifier outlet and in new classifying features that enable the machine to operate in a range between $2 and $10 per ton for products of low-micron and sub-micron sizes. Actual cost depends on grindability of the material and the fineness desired in the product.

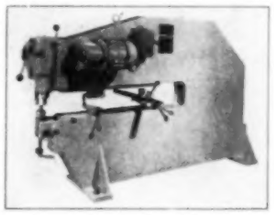
Two sizes provide feed rate in ranges between 200 and 1,800 lb. and between 400 and 6,500 lb. per hour. Either size can **employ air or steam as the operating medium.**

Raw material of minus 4 mesh or smaller is introduced continuously into the inlet hopper where an injector feeds the material from the hopper into the reduction chamber to be acted on by air, steam or other suitable gas under pressure. This pressure medium enters the manifold at the bottom and is discharged upward through suitable nozzles into the reduction chamber at sonic or supersonic velocities. Violent jet action in the reduction chamber breaks up the individual particles by impact and by abrasions against each other. Centrifugal force shifts the larger particles toward the outside for recirculation. The smaller particles work toward the inside as they are reduced to issue from the pulverizer and enter centrifugal-type collectors which the company can supply.

BREVITY—identify by IEN - 11040 if you write the maker

SHEARING . . Motor driven machine reciprocates cutter bit at high speed

Source: AMERICAN PULLMAX CO.
2631 N. Western Ave., Chicago 47, Ill.



Follows any outline

Model D-3 is a new assembly in the company's line of shearing machines, previously described IEN-2364-50. The new unit rates 9/32 in. in mild steel and provides a 48-in. throat. Gap height in the frame has been increased over previous designs to permit increasing the length of the cutting tools. Locking devices for both circle and straight cutting attachments are now standard equipment.

In each machine, the lower shear blade is stationary and the upper one is reciprocated through a short stroke at high speed. Set-up is made so the upper blade penetrates only far enough to cause the work to shear. The resulting cut is clean and free from burs. The machine can be set up to fold, bead and slot as well as to shear.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—identify by IEN - 11041 if you write the maker

Set Screws STAY SET on REO Power Mowers since changing to . . . ZIP-GRIP* Self-Locking SET SCREWS

REO uses not 1, not 2 . . . but 5 ZIP-GRIPS* ON EACH MOWER

send for FREE
ZIP-GRIP* Action Demonstrator
. . . and see why—

Zip-Grips* defy vibration, jolts, shocks . . . "Do Not Loosen in Normal Service", says Reo Motors, Inc., makers of "America's Biggest Selling Power Mowers".

The ZIP-GRIP* demonstrator shows you how ZIP-GRIP's* exclusive Contra-Thrust action together with Interference Fit provides positive self-locking effect in over 100 products.

Along with your FREE ZIP-GRIP* Action Demonstrator we will send you, without cost, an illustrated Data Sheet and an offer of Engineering Test Samples to help solve puzzling set screw applications on your products. Write for these, without charge or obligation.

*PAT. PENDING

Makers of Socket and Headless SET SCREWS

Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

We specialize in Solving Puzzling Set Screw Problems.

BREVITY—identify by IEN - 11042 if you write the maker

Calling all users of Speed Reducers!

Get the new Cleveland Book FREE

Bulletin 130 gives rating tables, dimensions and other data you need in selecting the right sizes in standard worm-gear speed reducers. Ask for your copy.

New bulletins on other types of Cleveland worm gear drives and worm-gear sets also available. Outline your needs. The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio.

CLEVELAND Worm Gear *Speed Reducers*

BREVITY—identify by IEN - 11043 if you write the maker

How to save Labor and Money by Centralizing Lubrication

FOR more than 20 years, Farval has been saving manpower and money for users. Through efficient, dependable lubrication of machines and industrial equipment of all kinds, Farval saves 4 ways: It saves oiling labor, it saves lubricant, it reduces bearing expense, it eliminates down time.

The Farval System is a positive mechanical method of delivering oil or grease under pressure to a group of bearings from one Central Station, in exact quantities, as often as desired. It consists of a central pumping unit, two main supply lines and a measuring valve for each bearing.

Bulletin 25 gives you the facts and figures to apply to your own lubrication problems. The Farval Corporation, 3258 East 80th St., Cleveland 4, Ohio.

Write for FREE Bulletin 25

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

BREVITY—identify by IEN - 11044 if you write the maker

PORTABLE GRINDING PROBLEM?

BLACK & DECKER PORTABLE GRINDERS
4 models, 5" and 6" wheel diam.

Switch to Black & Decker POWER!

B&D PORTABLE GRINDERS let you bring the tool to the work when work is heavy, bulky, hard to move. Prepare surfaces for welding; smooth welds; snag and grind castings; remove rust, scale, old paint; cut off old rivets, studs, bolts; grind, clean and buff frames, cabinets, etc. Many features to *speed* up work: perfect balance for easier handling; splined gear mountings for perfect power transmission; steel bearing inserts for smooth running; complete abrasive dust protection for vital parts. See your nearby B&D Distributor for a demonstration. Write for free catalog to: THE BLACK & DECKER MFG. CO., 615 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL
Black & Decker PORTABLE ELECTRIC TOOLS

BREVITY—Identify by IEN - 11045 If you write the maker

For Sure Sealing And Long-Life Sealing

Specify SYNTRON SHAFT SEALS

FOR PUMPS • COMPRESSORS TURBINES • ENGINES • MIXERS MACHINES • PROPELLER SHAFTS ETC.

Provide fully automatic sealing action.

Standard seals eliminate leakage of air, water, gases, petroleum products, etc., and withstand temperatures from 10°F. to 200°F. and pressures to 250 psi. Special seals for corrosive and abrasive liquids.

EASY TO INSTALL · EASY ON SHAFTS · EASY ON POWER

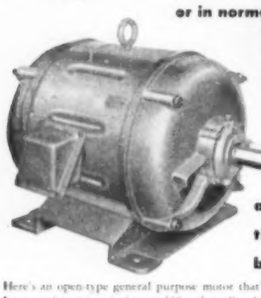
Write for Descriptive Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 11046 If you write the maker

Ceiling Mounted-Sidewall Mounted

or in normal horizontal position



Wagner STEEL FRAME MOTORS *are Drip Proof*

and... they're *proved* **by years of service**

Here's an open-type general purpose motor that's completely drip-proof in any horizontal position, in frames 326 and smaller, because there are no openings in the frame and the endplates can be rotated 90° or 180° for drip-proof installation on walls or ceiling.

Wagner steel-frame motors are available with either sleeve or *ball bearings which may be relubricated*. The motor frames are formed of heavy rolled steel, shaped to accurately center the stator core and to provide passages for ample ventilation. An internal fan moves a large volume of cooling air through these passages to carry off heat from all parts of the motor.

Wagner Steel-Frame Motors are available in electrical types to meet most industrial requirements. Bulletin MU-185 gives full information. Write for your copy.

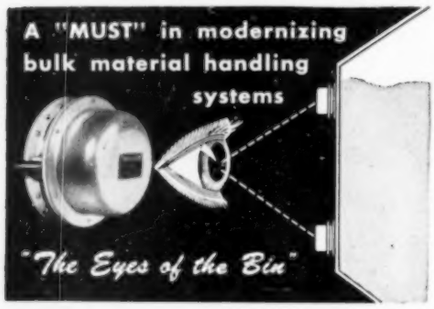
Wagner Electric Corporation 1896 1951

6414 PLYMOUTH AVENUE ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 11047 If you write the maker

A "MUST" in modernizing bulk material handling systems



BIN-DICATOR BIN-LEVEL INDICATOR

BIN-DICATOR "keeps an eye" on levels of bulk materials in silos, hoppers, bins, chutes and automatically reports to central control point. Prevents over-filling; prevents overfeed and underfeed to conveyors and filling equipment; prevents delays and waste. Low cost, easy to install, simplest operation. Widely used.

BIN-FLO Aerator Units keep dry, finely ground materials moving in bins, hoppers, chutes; prevent packing and bridging.

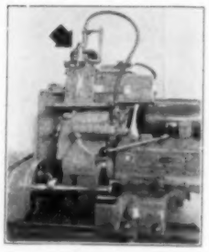
NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

BREVITY—Identify by IEN - 11048 If you write the maker

GRINDING . . Wheel dresser traverses wheel in automatic cycle

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.



Available to order

New diamond device for wheel truing assemblies in the wheel guard on any of the company's cylindrical grinding machines. It moves across the face of the wheel or combination of wheels at predetermined feed and speed and returns to starting position to complete a cycle each time a push button is depressed. The wheel is trued without disturbing the machine's table setting and without any special positioning of the wheel head. It can be supplied on new machines and also on those that are now in service in the field.

BREVITY—Identify by IEN - 11049 If you write the maker

INSULATING . . Liquid plastic foams to hard consistency in a mold

Source: REZOLIN INC.
4823-27 W. Jefferson, Los Angeles 16, Calif.

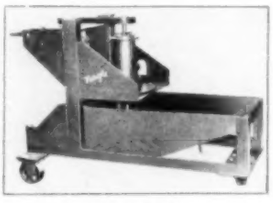
Sample kit lists at $5.75

Corfoam No. 114 is a new liquid phenolic resin that is supplied with a foaming agent and accelerator for mixture and pouring into a mold at room temperature. The material foams into a structure of tiny gobular non-connecting cells with density of approximately 14 lb. per cu. foot. It develops compressive strength to 500 lb. per square inch. It exhibits good adhesion to paper, plastics, wood. It will not support combustion. It can be foamed in large batches.

BREVITY—Identify by IEN - 11050 If you write the maker

PUMP . . Motor driven centrifugal and wheel mounted sump for transfer

Source: NAGLE PUMPS, INC.
1241 Center Ave., Chicago Heights, Ill.



Rolls to the job

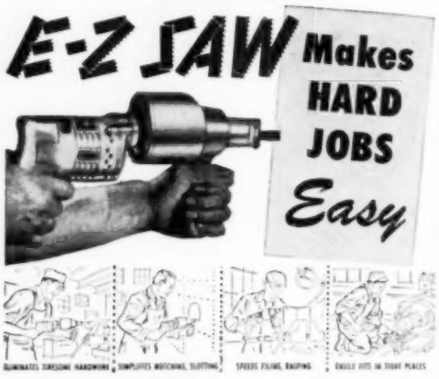
New assembly of one of the company's Type SW-OB 1½-in. pumps and wheel-mounted sump provides a portable assembly to transfer porcelain slip and glaze from grinding mills to overhead storage tanks in a porcelain - enameling plant. The pump rates 33 gpm. of fluid having 1.9 specific gravity and operates against a 50-ft. head. Both the pump and sump can be flushed and cleaned out. The pump parts are made of wear-resistant materials. The assembly is representative of special equipment the company is prepared to supply to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11051 If you write the maker

New Power-Driven

E-Z SAW Makes HARD JOBS Easy



QUICKLY, EASILY SAWS and FILES ALL METALS WOOD, PLASTICS COMPOSITION and other materials

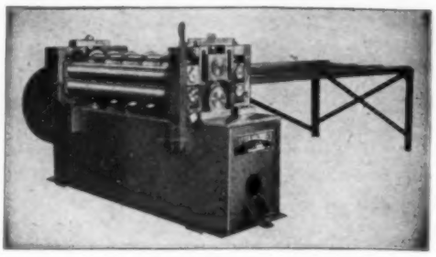
One of the handiest multi-purpose tools made. Abolishes tiresome hand sawing and filing. Pull the trigger, E-Z Saw does the work. It's fast, effortless. Unequalled for panel notching and slotting in wood or metal. Reaches into tight places with ease. Attaches to electric or air drills, or flexible shaft. Completely portable. Top quality, durable construction. Quickly pays for itself. Write for details NOW!

E-Z WAY TOOL CO. 549 W. Washington Blvd. Chicago 6, Illinois

BREVITY—Identify by IEN - 11052 If you write the maker

RAFTER GANG SLITTER

For Lasting Accuracy

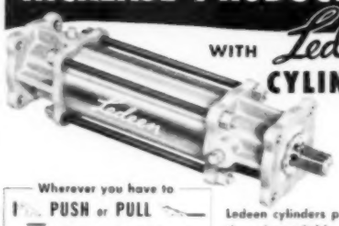


With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES & PRESS BRAKE FORMING DIES

BREVITY—Identify by IEN - 11053 If you write the maker

INCREASE PRODUCTION WITH Ledeen CYLINDERS



Wherever you have to
PUSH or PULL
LIFT or LOWER
PRESS or SQUEEZE
TILT or TURN
OPEN or CLOSE

Ledeen cylinders provide positive, dependable power and pressure in straight line motion. Designed for air, oil, or water operation, they are uniform in design and construction, affording a wide number of varieties and adaptations. Ledeen cylinders are easy to install, occupy minimum space, and are built for long, economical service.

Standard Ledeen cylinders and mountings are available from distributors' stocks in major cities. Special cylinders if required. J.I.C., of course.

Ledeen **CYLINDERS ARE GOOD CYLINDERS**

Write for Bulletin 500

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

BREVITY—Identify by IEN - 11054 If you write the maker

SAVE UP TO 85% ON TOOLS-MACHINERY AND PARTS!!

NEW! 200 PAGE CATALOG

WAR SURPLUS SAVINGS

STATIONARY or PORTABLE **D.C. ARC WELDER**
For light or heavy industrial work. Delivers 300 Amps., continuous or 350 to 400 Amps., intermittent. Designed to weld continuously for hours... This unit is built around rugged, heavy duty, aircraft type generator and comes complete with Pulley reactor, output controls, Hi-Lo switches & rheostat mounted on sturdy steel frame. Operates on 15 H.P. for maximum output. Gas or electric motor. 97.50

JUST OFF THE PRESSES! IMMEDIATE DELIVERY! ORDER NOW!!
Our latest and biggest CATALOG of NEW and SURPLUS BARGAINS. Thousands of items at Ultra-HEARD OF LOW PRICES! SAVINGS UP TO 85% in Hand & Power Tools, Electrical Supplies, Industrial Machinery, Gas and Electric Motors, Winches, Hoists, Machine Tools, Gauges, Welding Equipment, Pneumatic & Air Tools, Raw Stocks, Aluminum, Brass, Copper & Steel in Sheets, Bar, Rods, Tube & Extrusions, Nuts, Bolts, Rivets, Screws, Wire, Cable and a Huge Stock of HYDRAULIC SUPPLIES including Cylinders, Valves, Pumps, Motors, Fittings, Tubing, etc. While these items last we will continue to sell them at typical low Palley Prices. Write for your copy of the Bargain Packed Catalog TODAY!

PALLEY SPECIALS on HYDRAULIC PUMPS & CYLINDERS

HYDRAULIC PUMP or MOTOR GEROTER TYPE
Logan Gerotor type. For operating hydraulic systems on trucks, tractors, etc. Delivers 8 GPM at 1200 RPM at 1000 PSI with 5 HP. Can also be used as Hydraulic fluid motor. 3/8" stand pipe ports. 1/2" splined shaft for pulley or direct attachment. 5½" dia., 7" long. Used but condition guaranteed. 19.50

Special! HYDRAULIC CYLINDER
Gives 20,000 lb. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on low pressure or systems. 4" bore, 18" stroke, 30½" length. Ideal for roadbase - shop machinery. 29.95

P-3 STRATO POWER PUMP
With built-in variable flow control valve in head. Positive displacement piston type. Displacement capacity: 2 gal. per min. at 1500 RPM at 1250 PSI. Pressure limit 1250 PSI continuous, 1400 PSI for 15 sec. Operates at 3750 RPM, intermittent max. 4500 RPM. Rotates either direction without adjustment... 19.50

No. 3 HYDRAULIC CYLINDER
Double action. Bore is 1" — Shaft ½". Max stroke of 21/2" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty, 3000 lbs. intermittent. Will lift or push up to 1100 lbs. 5.75

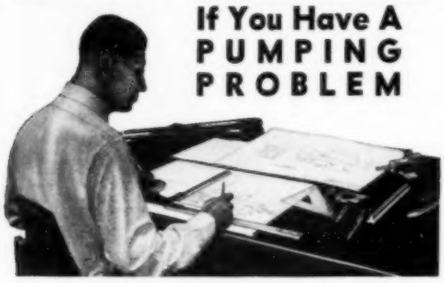
P-4 VICKERS ANGLE PUMP
Positive displacement type, angle piston. Displaces .502 cu. in. per revolution. Max capacity of 6 gal. per min. at 3000 RPM at 1500 PSI, continuous. 1875 for 15 sec. Operating speed of 3750 RPM, intermittent maximum, 4500 RPM. Rotates to the right only. 19.49

4 WAY VALVE
Poppet type. Pressure balanced. Off at neutral position. Piston type with built-in relief valves for both of cylinder strokes. 3/8" AN tube size (7/8"-14 thread) inlet & outlet. Ports to cylinder are 1/2" AN tube size (3/4"-16 thread). 9.75

PALLEY SUPPLY CO. DEPT. IN15 4321 SAN FERNANDO RD. GLENDALE 1, CALIF.

Order from this ad. All sales final. All prices F.O.B., Glendale. Pay by M.O. or check. P.O.'s accepted from D.&B. firms, by deposit with C.O.D.'s.

BREVITY—Identify by IEN - 11055 If you write the maker



If You Have A PUMPING PROBLEM

. . . ask for

VIKING PUMP ENGINEERING

You'll find Viking engineers don't need to compromise on size or style of Rotary pump to fit your needs. Probably there is one ready to adapt to your problem. They have a wealth of experience to draw from to help solve your pumping problems. Forty years of building, designing and applying Viking's gear-within-a-gear principle has developed the most complete line of all rotary pumps and it places them in a position to solve your pumping problem best.

VIKING — AN HONORED NAME IN PUMPING

Ask Viking for the answer to your pumping needs. Send for free bulletin 51SF today.

See Our Catalog in Sweets

Viking PUMP COMPANY Cedar Falls, Iowa

BREVITY—Identify by IEN - 11056 If you write the maker

CHROMALOX gives you the *LOW COST* answer for

- VARIABLE HEAT
- NON-BREAKABLE INFRARED
- SAFE OPERATION

CHROMALOX ALL-METAL *Electric* RADIANT HEATERS

The new and improved CHROMALOX heating principle gives ALL infrared heat advantages: high heat intensity, "color blind" infrared radiation, heat that's infinitely variable! You get more satisfactory results at reduced costs in baking, drying, curing, preheating and similar uses with CHROMALOX Radiant Heaters.

Write for FULL DATA

Tell us what you want to do with infrared heat and we'll send you data sheets covering your needs.

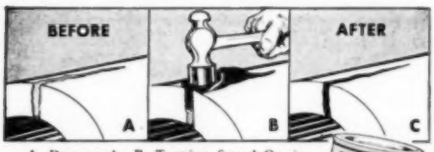
Radiant Heater Div., Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa.

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

See Chromalox Unit Heaters Advertisement, Page 5

BREVITY—Identify by IEN - 11057 If you write the maker



A—Deep crack. B—Tamping Smooth-On in. C—Crack completely sealed.

If You've Never Used SMOOTH-ON, *read this:*

Smooth-On No. 1 Iron Cement is a metallic powder which you mix with water to the consistency of putty. You tamp it, while still soft, into a crack or hole, making sure to force it against all surfaces. With Smooth-On you don't need to use heat or special gadgets. As it hardens, it expands slightly, clinging tightly in place. The repaired part is ready for use as soon as Smooth-On sets hard. Keep Smooth-On handy for both emergency and routine maintenance repairs. Get it in 7 oz., 1, 5, 20, or 100 lb. size. If your supply house hasn't Smooth-On No. 1, write us.

FREE 40-PAGE REPAIR HANDBOOK

Shows many industrial and home repairs made with No. 1 and other Smooth-On Cements. Leaks stopped, cracks sealed, loose parts made tight. 170 illustrations. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON

THE IRON REPAIR CEMENT OF MANY USES

BREVITY—Identify by IEN - 11058 If you write the maker

CRANE . . Winch and boom are mounted on turntable base

Source: CLYDE IRON WORKS
Michigan & 29th Ave. W., Duluth 1, Minn.

Needs no guy lines

Model W-3 is a new crane available in boom lengths of 20, 30 and 40 ft. with loads rating from 1 ton at 40-ft. radius to 5 ton at 10-ft. radius. The assembly is suited particularly for loading and unloading operations at docks, railway terminals, yards and to set steel on construction jobs in the field.

The power-driven winch mounted on the rotating structure acts also as a counterweight. The complete construction is centered on a cast-steel turntable by a bronze-bushed pin and is supported by four double-tapered anti-friction bearing rollers. Either gasoline engine or motor drive can be specified. Swing is by hand or power. Clearance on the tail swing is 5½ feet.

BREVITY—Identify by IEN - 11059 If you write the maker

LUBRICATING . . Top oil for use in gas and gasoline engines

Source: UNIVERSAL LUBRICATING SYSTEMS INC.
784 Allegheny Ave., Oakmont, Pa.

Contains inhibitor to prevent corrosion

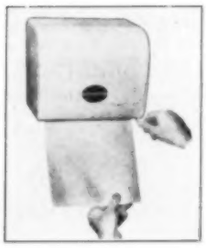
New oil has been developed for recommended feed to engine cylinder heads through an oiler also manufactured by the company. In addition it can be used as an additive in a gasoline tank and it can serve as a crankcase oil. Packaging is in pint bottles, 12 to a carton.

Application results in dissolving sludges, resins, gums, varnishes which form above the piston and in lubricating the rings and valves so they can function freely.

BREVITY—Identify by IEN - 11060 If you write the maker

WASHROOMS . . Metal dispensers, crank operated for paper towels

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.



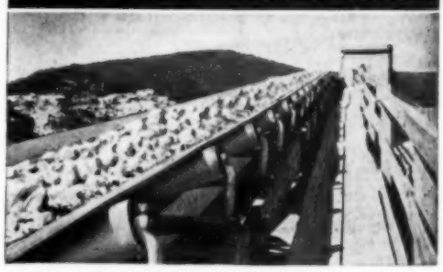
To conserve paper

Mieromatic is a new stainless-steel cabinet with a glossy baked-enamel surface to dispense the company's Westroll paper towels. Tests indicate that the average user will turn the crank to deliver about 17 in. of average length. The cabinet is available in three models. The paper-towel material is supplied in rolls, 16 to a case, for the equivalent of approximately 10,000 single-sheet deliveries.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11061 If you write the maker

BELTING BUILT FOR THE TOUGH JOBS



HEWITT-ROBINS Belting Lasts Longer . . . Costs Less!

When trouble comes by the ton, the easiest, most dependable, most economical way to move it is on a Hewitt-Robins conveyor belt.

Today engineers the world over instinctively specify Maltese Cross® where the going is really tough, Ajax® for general service, and Conservo® for light work and portable conveyors.

For Hewitt Rubber belting is protected against moisture, oils, flexing, and ply-separation. Maximum strength plus flexibility are assured through extra-tough rubber covers, heavily textile-reinforced.

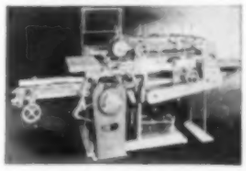
For details on belting—or for entire belt conveyor systems—write Hewitt Rubber Division, Buffalo 5, N. Y.

HEWITT-ROBINS CONVEYOR BELTING

HEWITT-ROBINS HR **INCORPORATED**

BREVITY—Identify by IEN - 11062 If you write the maker

Our world-famous Model FA—wraps an extensive variety of packages



Modern Machine Wrapping

Key to Greater Savings

Whatever your type of package or product, you can probably wrap it at a saving on one of our machines. For we have over 80 basic models and a large technical staff ready to solve any special problems you may have.

You'll find "PACKAGE" machines lead the field in up-to-date efficiency—provide savings that often pay for the machine in a few months' time! Contact our nearest office or write for the informative folder "Packages that Sell."

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS · SAN FRANCISCO · LOS ANGELES · MONTREAL · TORONTO · MEXICO, D.F.

BREVITY—Identify by IEN - 11063 If you write the maker

He's Building a NEW MOTOR CONTROL STATION

to save space, time and trouble

Centralizing the controls for all the motors in an area . . . saves operator's time, saves space, eliminates wall mountings with attendant framework.

Ward Leonard MULTITROL is a complete assembly of individual standardized "blocks", each a complete control for one motor or group. It fits any available space, is completely flexible to allow for future requirements.

Investigate MULTITROL. Write for Bulletin 4410. WARD LEONARD ELECTRIC CO., 33 South St., Mt. Vernon, N.Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 11064 If you write the maker

Everybody

DOES A BETTER JOB WITH

CHAMPION *Lamps*

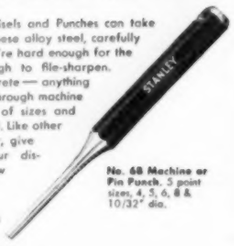
—FOR CHAMPION MEANS THE BEST IN LAMPS!

CHAMPION LAMP WORKS
Lynn, Massachusetts
A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

BREVITY—Identify by IEN - 11065 If you write the maker

STANLEY Cold Chisels and Punches

That's right! Stanley Cold Chisels and Punches can take it. Forged from silicon manganese alloy steel, carefully tempered and hardened, they're hard enough for the toughest job, yet soft enough to file-sharpen. Chisels cut rivets, steel, concrete — anything not tempered; Punches drive through machine steel. Made in a full range of sizes and types for every industrial need. Like other Stanley Tools they last longer, give more work value. See your distributor. Stanley Tools, New Britain, Connecticut.



THE TOOL BOX OF THE WORLD

STANLEY

Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 11066 If you write the maker

Pipe joints sealed with Key-Tite cannot leak. Key-Tite is a perfect seal on all lines carrying water, gas, low-pressure steam, compressed air, etc. It contains no lead or substitutes and does not affect the taste or odor of potable liquids. Joints are easily opened, too, for it will not freeze in the joint. Stop losing money through leaky pipe joints . . . seal with Key-Tite.

Send for Free Sample
Try Key-Tite in Your Own Plant at Our Expense

KEY Company

KEY COMPANY
2651 McCasland Ave., East St. Louis, Ill.

BREVITY—Identify by IEN - 11067 If you write the maker

No Floor Damage!

WHEN YOU MOUNT YOUR MACHINES ON

UNISORB®

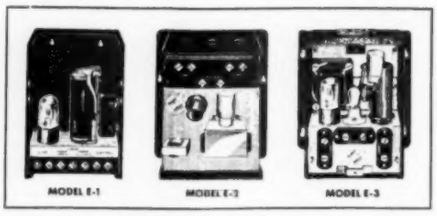
UNISORB - Mounting requires no bolts . . . no lag screws . . . no old-fashioned, destructive floor drilling. A special cement (we supply it) binds the UNISORB pads to machine feet and floor with a holding strength of 1500 p. s. f. *minimum!* What's more, UNISORB absorbs from 60% to 85% of transmitted machine vibration and noise . . . saves floors, buildings, machinery . . . often permits higher machine speed. Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

The FELTERS Company
210-I SOUTH STREET
BOSTON 11, MASS.

BREVITY—Identify by IEN - 11068 If you write the maker

RELAY . . Three electronic assemblies for laboratory use, 10 and 30 amperes

Source: EMIL GREINER CO.
22-24 N. Moore St., New York 13, N. Y.



List prices $35, $45, $62.50

Model E-1, the simplest of three new electronic laboratory relays, rates 10 amp. on its 110-volt load contacts for operation in an ac. or dc. circuit. It employs a Micro switch for the relay element and is actuated by a control current of 15 microamp. on 35-volt ac. Maximum length of the control leads is 25 feet. Size is 5⅛ by 4 by 6⅛ inches. Weight is 4½ pounds.

Model E-2 rates 30 amp. on 110-volt ac. in the load circuit. It employs a mercury switch and is actuated by 6 microamp. at 6.3-volt ac. Maximum length of its control leads is 40 feet. Dimensions are 7 by 3⅞ by 7⅛ inches. Weight is 6 pounds.

Model E-3 rates 30 amp. at 110-volt ac. on its mercury-switch contacts. It is actuated by 3 microamp. at 16-volt dc. It measures 7¼ by 5¾ by 8 in. and weighs 7½ pounds. This unit permits unlimited lengths of leads and employs an isolating transformer for full freedom in grounding either side of the line or the control circuit. It and Model E-2 can be set for normally-on or normally-off operation by positioning two metal jumpers in a panel socket.

BREVITY—Identify by IEN - 11069 If you write the maker

TESTING . . Voltage indicator also identifies ac. and dc. circuits

Source: SQUARE D CO.
6058-62 Rivard St., Detroit 11, Mich.

Nothing to break

Range is 110 to 550-volt ac., in four steps, and 125 to 600-volt dc., in three steps, for this new design of the company's Wigginton voltage tester, previously described IEN-7514-49. As in the previous design, a two-color magnet is mounted on a rotating shaft under a transparent plastic cap at one end of the molded plastic housing of the tester.

Contacting the prod in a circuit causes the magnet to rotate. The portion or color on the magnet that is up in the cap will then represent the positive side of the circuit. The voltage-indicator pointer is operated by a solenoid to a position corresponding to the voltage in the circuit. There will be vibration if the circuit is ac., a steady reading if it is dc.

The improved design includes slotted receptacles on each side of the housing to provide test mounts for the prod and provision to insert the leads for overhead testing with the scale face up at eye level. The prods are provided with 4-in. fibre insulators and hardened flat insulated steel points sharpened to pierce insulation.

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11070 If you write the maker

Bulletin 600 Manual Starting Switches

- Compact, attractive design
- Available in special enclosures

Bulletin 600 Manual Starting Switches are extensively used for air-conditioning and refrigeration service. Accurate and dependable overload protection for motors of one horsepower or less on a-c, or ¾ hp or less on d-c. Thermal overload elements available in a variety of ratings. Meet all N.E.C. requirements. Write for descriptive bulletin. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 11071 If you write the maker

FOILED AGAIN!

Those three little villains — Dust, Dirt, and Grit — are *foiled every time* they match their wits against a CLEMENTS-CADILLAC blower-suction cleaner. It blasts them out of every nook and cranny of your machinery and equipment — quickly, easily, and economically.

Eligible under C.M.P. regulations.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 11072 If you write the maker

SPREADS THE STRAIN!

The RAMSEY "Diagonal" Flexible Coupling

Note how the steel pinions are cut diagonally to stagger the shear point of the chain pins and utilize the full width of the chain. This patented RAMSEY design gives greater strength to the assembly, assures longer life under greater loads! Easily installed, aligned, and disconnected. Available in ten sizes, from ½" bore, in capacities to 600 hp. Write today for literature giving dimensions, capacities, list prices.

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 11073 If you write the maker

NO MORE CARBON SCRAPING

U.S. PAT. #2318842*
GUNK DUNK BENCH Carburetor and Parts Cleaning Kit. New 6½ gal. size deep "Vapor-saktor" design pail.

Nothing Decarbonizes and Cleans CARBURETORS, FUEL PUMPS, PARTS Like . .

New—Improved—More Potent*

GUNK HYDRO-SEAL

A WORD OF CAUTION
If it doesn't bear the Genuine GUNK trademark, it may be a partly diluted imitation—and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

1. Faster . . . Terrific penetration . . . new improved odor.
2. Quickly digests and removes carbon gum, paint, lead, makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices and diesel nozzles . . without etching.
3. Lasts more than one year . . . due to water blanket.
4. Works hot or cold . . . Rinses wet or dry.
5. Patented Double Barrel Performance Guaranteed.

SOLD BY BETTER JOBBERS EVERYWHERE
Write for Name of Nearest Stocking Jobber
— Flatly Refuse Substitute Imitation —

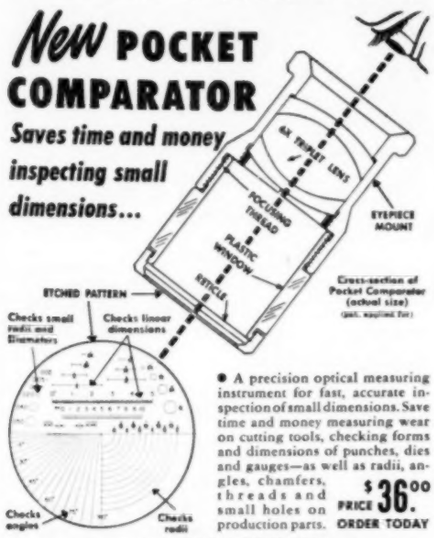
IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE, MASS.

BREVITY—Identify by IEN - 11074 If you write the maker

New POCKET COMPARATOR

Saves time and money inspecting small dimensions...



● A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

Write for FREE descriptive folder

a product of BELL & HOWELL CO. distributed by

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 11075 If you write the maker

B.F.Goodrich

HERE'S HELP... on industrial tire and wheel problems

YOU need two things for maximum industrial tire and wheel service:
(1) built-in tire quality and
(2) the *right* tire for the job.

With B. F. Goodrich, you get both of these factors.

In the first place, BFG's are built to give long, trouble-free service and maximum operating results.

Secondly, your local B. F. Goodrich dealer has been specially trained to give you a complete industrial Tire & Wheel Analysis service.

HERE'S HOW THE B.F.Goodrich ANALYSIS PLAN HELPS YOU

● Your B. F. Goodrich dealer will study your operation. He'll analyze loads, hauls, equipment, floors and hauling surfaces, and then make specific recommendations regarding tire and wheel types and sizes. He'll also offer maintenance suggestions you'll find extremely helpful. His recommendations are impartial because only BFG has a *complete* line of solids, semi-pneumatics and pneumatics. There's no obligation for this service . . . longer industrial tire life is yours for the asking.

A similar program is available for the manufacturers of industrial hauling equipment.

Use the coupon for full details of this plan.

The B. F. Goodrich Co.
Department TW-142
Akron, Ohio

Please give me additional information on your new Tire and Wheel Analysis plan.

Name_____
Title_____
Company_____
City_____ State_____

BREVITY—Identify by IEN - 11077 If you write the maker

GAGE . . Micrometer particularly to measure crank shafts

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

1.500 to 2.500 Inches

The reading point for this new No. 436 micrometer is on the under side of the thimble in the form of a longitudinal line on the sleeve. In this position it is plainly visible when diameters are being measured on a crank shaft, particularly between the webs. The gage has a 3-in. frame finished in smooth black enamel. The thimble is stamped with decimal equivalents. Rust-resistant, no-glare, satin-chrome finish on the sleeve and the thimble provide a background on which the markings stand out. One-piece spindle carries hardened threads ground from the solid. The design includes a ratchet stop and lock nut.

BREVITY—Identify by IEN - 11078 If you write the maker

MONORAIL . . Motor driven trolley employs hydraulic coupling in the drive

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Easy start smooth stop

New design, added to the company's lines of motor-driven hoist trolleys, provides a unit in which the motor connects to the travel drive through a hydraulic coupling. The arrangement permits the motor to start free and come up to nearly full speed before the load is imposed. It also absorbs shock loading and permits full stall without injury to the motor or making it necessary for the motor to stop.

The trolley is suited particularly for hoists required to move as well as lift ladles of molten metal and open containers of other liquids that must be guarded against spilling. Because of the gradual take-over of the load by the motor there is no swing upon starting or stopping and the trolley assembly requires no travel brakes. Trolley sizes range from ⅛ to 12-ton capacity in the available line.

BREVITY—Identify by IEN - 11079 If you write the maker

PROTECTING . . Nylon hair net, company distribution to women workers

Source: FLAMINGO PRODUCTS INC.
1003 N. Griggs St., Danville, Ill.

No. 800 is a new design in the company's line of nylon hair nets particularly designed for quantity purchase by plants employing women workers in order to distribute to the individual workers as a company service. The net encloses the worker's hair as a protective measure. It keeps the hair in place during a working period. List price per gross is $7.20.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11080 If you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS Centrifugal SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

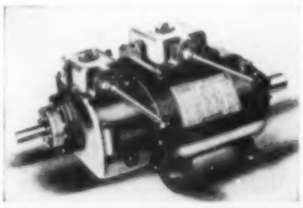
MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 11081 If you write the maker

plate or platform mounting

9000-B (1-5 H. P.) 5 H. P. capacity with input speed of 900 r.p.m. Gear Ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.

8100-B (5-10 H.P.) 10 H.P. capacity with input speed of 900 r.p.m. Gear Ratios: 1:1 - 2:1 - 3:1 - 4:1. Special ratios at extra cost.



9300 (30 H. P. capacity with input speed of 900 r.p.m.) 8 speed Changes in Geometric Progression of 1.29. (Total reduction of 6:1).

Send for catalog and complete information.

up to 50 h. p.
WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. • 4466 SCOTTEN • DETROIT • MICHIGAN

BREVITY—Identify by IEN - 11082 If you write the maker

ROPER ROTARY PUMPS

The Name of Dependability

Widely Used in Diversified Industries

Whether your equipment is dependent upon a pump for fuel transfer, coolant work, or hydraulic action, you will maintain greater operating efficiency with the rugged Roper — Series F. This series is built to pump clean liquids of all kinds, and is available in standard or special-built designs in 1 to 500 g.p.m. . . . pressures to 500 p.s.i. WRITE TODAY for Catalog and Complete Information.

GEO. D. ROPER CORP.
211 Blackhawk Park Ave.
Rockford, Illinois

ROPER Rotary Pumps

BREVITY—Identify by IEN - 11083 If you write the maker

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
1635 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 11084 If you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-52.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

BREVITY—Identify by IEN - 11085 If you write the maker

The FIRST monorail

Development of the unique single track railroad car, balanced by gyroscopes, was started by the Englishman Louis Brennan in 1896. Never in wide use, it nonetheless led to many further applications based upon the principles thus developed.

JERVIS B. WEBB CO. was the FIRST to develop TOWVEYOR SYSTEMS

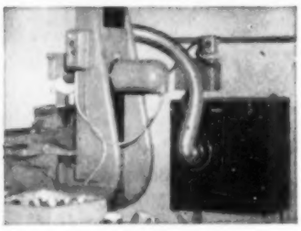
under-floor type towing conveyors

This continuous chain conveyor runs in a steel slot below the floor. There is nothing to obstruct. A simple towing pin device is attached to any standard 4-wheel truck or trailer, 2-wheel truck with dolly, and operator either engages or disengages by lowering or raising the pin. When the pin is dropped into the slot, the trolley attached to the Webb Drop Forged Rivetless Chain picks up the load automatically. This original Webb development—The Towveyor—offers great speed and efficiency for handling boxes, packages, barrels, tote boxes, parts, etc. Loading and unloading can be done at any point. The Towveyor System is flexible—trucks may be added, disengaged or side tracked, as desired.

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
9911 ALPINE AVE. DETROIT 4, MICH. OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 11086 If you write the maker

STOP DUSTS



Instantly *with* DUSTKOP

Available from stock of 22 standard models
300 cfm to 10,000 cfm

for: Surface Grinders, Tool and Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost all kinds of industrial dusts.

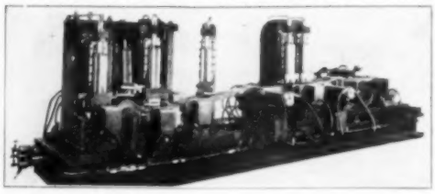
Ask for Catalog 605-2. Describes dust problem for recommendation by return mail — no obligation.

AGET-DETROIT CO.
401 Main Street Ann Arbor, Michigan

BREVITY—Identify by IEN - 11087 If you write the maker

PRESS . . Multiple assembly of 200 ton hydraulic heads

Source: DANLY MACHINE SPECIALTIES INC.
2102 S. Laramie Ave., Chicago 50, Ill.



For many holes at any angle

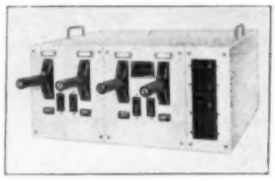
Groups of multiple or single holes can be perforated in work such as the side members for automobile chassis by new hydraulic equipment the company is prepared to supply to specification. Riveting set-ups also can be made. Each machine is an assembly of the hydraulic heads, previously described IEN-11382-47, which includes hydraulically-operated punch or punches, blank holder and stripper. Any number of these heads can be combined in a single machine and connected to the power source. Continuous pressure intensification permits change in the number of assemblies in the circuit from a given power unit.

The hydraulic pressure connects at two ports at the rear end of the main operating piston in each head. One side operates the unit on the forward power stroke. The other side provides pressure, beyond the main piston, against a stripper piston that results in retraction of the main cylinder and punch or punches. In an installation the main piston is stationary and the cylinder acts as the moving member. The square-body cylinder assemblies are available in six sizes measuring 4⅝ to 11¾ in. in cross section and rating from 40 to 227 ton on 10,000-lb. pressure. Stroke is 2½ to 4 inches.

BREVITY—Identify by IEN - 11088 If you write the maker

TRANSFORMER . . Variable voltage units in multiple assembly for dimming service

Source: SUPERIOR ELECTRIC CO.
951 Demers Ave., Bristol, Conn.



To dim, brighten, blend

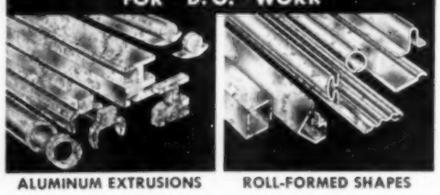
New assembly of the company's 2,000 watt-Powerstat variable-voltage transformers are now available in units of 3, 4, 5 and 6 in a rectangular housing. Individual units are operated by vertical hand levers with graduated drums. The levers can be interlocked for master control. A separate master handle can be provided.

Each unit has its own "on-off" switch and circuit breaker, card holder for circuit identification and pilot light. Standard output connectors include a terminal board for solid connection, pin-jack receptacles for single-prong or two-prong plugs, parallel-blade receptacles and twist-lock type receptacles. Operation can be set up from a two-wire single-phase, three-wire single-phase and four-wire three-phase ac. power line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11089 If you write the maker

PROMPT DELIVERY! FOR "D.O." WORK



ALUMINUM EXTRUSIONS ROLL-FORMED SHAPES

Let Werner light metal shapes help you meet "D.O." deadlines.

You can get prompt delivery of "custom" shapes in extruded aluminum, as well as roll-formed aluminum, stainless steel, brass, zinc and copper. Shapes are manufactured to close tolerances, to your exact specifications. Quality is assured by Werner's extensive manufacturing and engineering experience, plus full production facilities, including tool-and-die-making equipment.

For an estimate, send drawing and specifications, plus data on quantity, finish, length, etc. Werner can perform the following secondary operations—bending, drilling, punching, cutting, counter sinking and welding. Finishes—as extruded, polished or anodized.

FREE bulletins describing manufacturing facilities and telling when to choose extruded or rolled shapes. Write: Dept. IEN.

R. D. WERNER CO., Inc.
295 FIFTH AVE., N. Y. 16, N. Y. • PHONE MU 6-2595
MANUFACTURERS OF ALUMINUM EXTRUSIONS AND ROLL-FORMED SHAPES

BREVITY—Identify by IEN - 11090 If you write the maker

. . . for Greater SAFETY COMFORT STYLE DURABILITY } Specify CESCO Safety Goggles

made in 3 EYE SIZES BRIDGE SIZES TO FIT EVERY WORKER AND EVERY WORKING CONDITION

You can rely on CESCO Safety Goggles for:

- Impact resistance
- Shock-proof durable construction
- Correct fit
- Good looking, modern design
- Simple lens replacement

for Information about CESCO's complete line of Safety Goggles see your CESCO distributor or write

CHICAGO EYE SHIELD CO. • 2236 Warren Boulevard • Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 11091 If you write the maker

"Ro-Fin" Tubes

For Efficient heat transfer

Nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING are in production . . . straight lengths . . . coils . . . U-bends . . . with or without threaded end connection, or for standard flare connections! Nearly all nationally known manufacturers specify "Ro-Fin"!

For Refrigeration Condensers • Steam Condensers
Fluid Recovery Condensers • Fan-Type Unit Heaters
Concealed Radiation Convectors • Diesel Engine Cooling

Write for Information on All Heat Transfer Problems!

ROME TURNEY RADIATOR COMPANY

200 East Front Street Rome, New York

BREVITY—Identify by IEN - 11092 If you write the maker

NO TRAFFIC TIE-UP!

. . . WHEN YOU REPAIR WITH . . .

QUICK-FLOOR

You can make a complete, permanent, heavy duty concrete floor patch (or covering) in *one minute* and is ready to use when placed. Placing causes no delay or interference to traffic. The rule is *place, pack,* and *use* without cutting or mixing.

A PATCH A FOOT A MINUTE

The continuous use of *Quick Floor* since '38 by many people *(some over three hundred drums), spells satisfaction.*

We guarantee satisfaction. Service as required. Write for new folder.

dura-tred Co. Manufacturers since 1938
352 N. Central Park Blvd., Chicago 24, Ill.

BREVITY—Identify by IEN - 11093 if you write the maker

KUSHION-TORK
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.
Send for Bulletin No. 28-N.

Kanti-Lever Couplings

4,000,000 h. p. in Use

MFRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

BREVITY—Identify by IEN - 11094 if you write the maker

Timely Facts and Features You'll Find in the NEOPRENE NOTEBOOK

- how you can reduce maintenance costs
- ways to solve many production problems
- new ideas on neoprene's wide range of uses
- technical help in specific applications
- details of new improvements in old products
- interesting new neoprene products

YOU'LL FIND PROFITABLE READING in every issue of the Neoprene Notebook. Each issue is packed from cover to cover with new ideas to save you time, trouble, and money. Put your name on our mailing list. Subscriptions are FREE.

Clip this coupon and mail it today.

E. I. DU PONT DE NEMOURS & CO. (INC).
Rubber Chemicals Division, D-11,
Wilmington 98, Delaware
Please send me free issues of the Neoprene Notebook.

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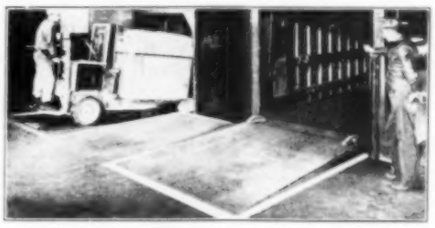
Position_____
Firm_____
Address_____

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 11096 if you write the maker

ELEVATOR . . Hydraulic ramp raises and lowers in shipping platform

Source: ROTARY LIFT CO.
1053-57 Kansas St., Memphis 2, Tenn.



Vertical range is 24 inches

Three ratings of 2½, 5 and 10 ton are now available in the company's line of Leva-Dock ramps, previously described IEN-2670-48. All three employ a platform measuring 6½ ft. in width by 8 ft. in length for assembly in a pit that will clear the width by 2 in. and the length by about an inch.

The platform is made of non-skid steel. It hinges at the inner end, is supported by one or two hydraulic cylinders. It is equipped at the outer end with a bridge plate measuring 5½ ft. in width by 13 in. front to back. This bridge plate hinges up to rest on a truck bed supporting the platform so it moves up and down with the truck. The platform is raised by hydraulic pressure from an individual or a centrally-located motor-driven power unit. One unit can serve six platforms.

Catalog RE-400, 12 pages, presents illustrated description of the new designs and installation details.

BREVITY—Identify by IEN - 11097 if you write the maker

TRANSFORMER . . For voltage control from 0 to 16 volts and from 110 volt ac.

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.

Excellent for soldering

Moving a slider in connection with a scale on the housing top of this new Type 71-A Variac transformer provides stepless voltage adjustment to a maximum of 16 volts on open circuit or to 13 volts at 5 amperes. The scale is calibrated for open-circuit voltage. The assembly measures 5½ by 3⅝ by 3¼ inches. It weighs 4 lb. and lists at $18.50.

The basic unit is composed of two layer-wound primary coils on opposite legs of a stack of L-type laminations plus two single-layer secondary coils wound over each of the primaries. Insulation between coils and to the core will withstand a 1,250-volt breakdown test. The secondaries are tapped by an arrangement of two standard Variac brushes on a single aluminum slider. This permits direct connection to the coils to both line and load without using slip rings.

The enclosure is made up of two aluminum U-pieces to provide a ¼-in. mounting slot at the back and a guided track for the slider and brushes at the front. The mounting slot permits securing the unit to a wall or into a unit of equipment. An extension cord and plug are standard equipment. Operation is on 110-volt 60 cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11098 if you write the maker

How to Buy the Best Gloves for the Job... At Lowest Cost!

N-14 All milled DuPont neoprene Stanzoil, heavyweight. Non-slip fingers and palm. Curved or straight finger styles.

PIONEER **Stanzoils**®

Smart buyers find it doesn't pay to buy one kind of glove for several different jobs, even if it's cheap. What pays is good protection for workers' hands PLUS gloves that make work easier and faster. Fit gloves efficiently to the job for more production—and new PIONEER catalog shows you how. *Unbiased advice, for Stanzoils include all kinds of liquidtight gloves:* all-neoprene, neoprene or plastic coated, 32 styles, weights, sizes, colors. You profit from scientific glove selection—write for this helpful catalog today!

Industrial Glove Division

The PIONEER Rubber Company
635 Tiffin Road, Willard, Ohio • Los Angeles

STANZOIL PIONEER

OVER 30 Years OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 11099 if you write the maker

NEW FRACTIONAL H.P. STARTER HAS ALL THE FEATURES!

- Quick-make, quick-break contact mechanism
- Single or double pole construction
- Double-break contacts of fine silver
- Modern styling
- Straight-thru wiring with convenient terminals—generous wire space
- Dependable melting alloy type overload protection—trip-free
- Definite trip indication
- Interchangeable overload relay units accessible from the front
- Open type starter can be used with standard switch box and flushplate

RATINGS:
Double pole: 1 H.P., 115—230 volts A.C. or D.C. *Single pole:* 1 H.P., 115—230 volts A.C. and ½ H.P., 115—230 volts D.C.

Write for Bulletin 2510A. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 11100 if you write the maker

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

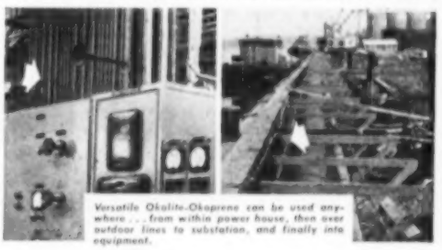
SHAF-TITE® ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
®Reg. U. S. Pat. Off. 673 Maple Street, Orange, Mass.

BREVITY—Identify by IEN - 11101 if you write the maker



Versatile Okolite-Okoprene can be used anywhere . . . from within power house, then over outdoor lines to substation, and finally into equipment.

why it pays to use OKOLITE-OKOPRENE CABLES *throughout* THE JOB

The installation above is typical of the trend toward using Okolite-Okoprene for all circuits of a job. For a large Kamyr Pulp Drying Machine installation in a major southern pulp and paper mill, power and control circuits, generator leads, motor and circuit breakers, self-supporting aerial distribution cable, push-button stations and lighting system . . . all circuits were Okolite-Okoprene cables.

Okolite-Okoprene is the one cable best qualified to keep your electrical circuits in continuous operation. Highly resistant to every element which attacks cable, Okolite-Okoprene is successfully used in wet, dry, hot or cold locations – exposed to weather or sunlight – underground or in conduit.

For the utmost circuit reliability – plus economy – use Okolite-Okoprene *throughout the job.* The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY
OKONITE *insulated wires and cables*

BREVITY—Identify by IEN - 11102 If you write the maker

SYNTRON

"Vibrating"

TEST SIEVE SHAKERS

Eliminate all guesswork.

Provide definite sizing of test samples.

Use standard 8" Screen Scale Testing Sieves.

Controlled electromagnetic vibration — no motors, belts, pulleys, etc.

A reset timer for accurately timed test periods.

110 volt, 60 cycle operation (220 volt to order).

Write for Catalog Data

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 11103 If you write the maker

NOW . . . A POLISHER THAT'S UNIVERSALLY ADJUSTABLE!

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns — such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

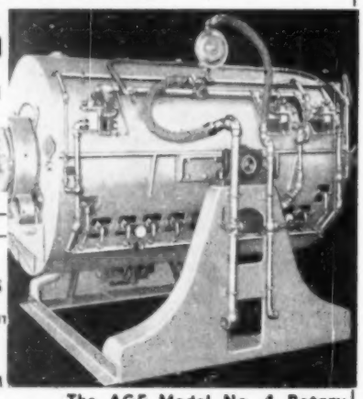
Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVE. • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 11104 If you write the maker

ROTATE for UNIFORM HARDENING

UP TO **1500** pounds per load



SLOWLY—GENTLY—THE WORK ROTATES AND COMES OUT CLEAN AND UNIFORM

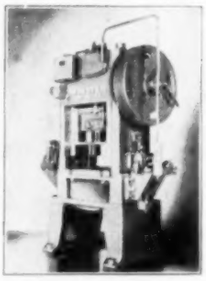
The AGF Model No. 4 Rotary Retort Gas Carburizer tilts up, to load and down, to unload. Write for Bulletin No. 1212.

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

BREVITY—Identify by IEN - 11105 If you write the maker

PRESS . . Motor driven machine to operate precision progressive dies

Source: MINSTER MACHINE CO.
52 W. Fifth St., Minster, Ohio



Press men will like it

Piece-Maker Series P designates new line of straight-side motor-driven presses in seven ratings from 20 to 150 ton. Each is available in four bed widths, the smallest of which measures 24 to 36 in. while the largest measures 42 to 60 inches. The press is equipped with the company's flywheel type of air-operated combination friction clutch and brake. Control can be specified at a pendant, pedestal, or push-button panel.

The slide rides in four gibs with eight guiding surfaces. Adjustable bronze ways are provided on each slide corner. Slide adjustment is manually-operated sleeve type. All wear points, including the main eccentric blower connection and gibs, are bronze lined in replaceable assembly. The flywheel is mounted on anti-friction bearings. Rivett or Bijur lubricating equipment is standard on sizes to 100 ton. The 150-ton units employ the company's own design of force-feed continuous lubrication.

Standard stroke is 1 in. on the first two machines, 1½ in. on the 45 and 60-ton units, 2 in. on the 75 and 100-ton machines and 2½ in. on the 150-ton assembly. Slide adjustment ranges from 2 to 4 inches. Distance from the bolster to the slide with the stroke down and adjustment up is 6 in. on the smallest machine, 15 in. on the largest one. Speed can be specified at 200 to 400 spm. on the smallest tanchine, 75 to 150 spm. on the largest one. Variable-speed transmissions can be specified.

Bulletin P251, Series P, 16 pages, presents illustrated detail description covering construction, operation, control.

BREVITY—Identify by IEN - 11106 If you write the maker

LIGHTING . . Incandescent fixture is made of aluminum, dust-tight design

Source: RUSSELL & STOLL CO.
125 Barclay St., 11th Floor, New York 7, N. Y.

The standard dome design

Junction box and pendent designs are included in a new line of dust-tight incandescent lighting fixtures. Both are intended for locations where flammable dust constitutes a hazard. Designs in the line include a plain unit without reflector, standard dome, shallow dome and angle reflector.

Lamp holders are located within the conduit-box assembly in both types to permit installation and wiring independent of the size or style of fixture. The fixture-globe-reflector fits either base and can be attached or interchanged by means of a bayonet slot and screw without disturbing the electrical connections. Both 100 and 200-watt sizes are available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11107 If you write the maker

CONTOUR MASKS

Metal, plastic, glass, ceramic, wood, rubber and other products can now be color-sprayed with Matthews snug-fitting "Contour" Spray Masks (in a few seconds) by unskilled workmen in your decorating department.

Use "Contour" Spray Masks for greater production . . . savings in costs . . . uniform, precision color-spraying.

Write Matthews today for complete information and literature, "BEHIND THE MASK". Or, send sample part, indicating color scheme.

WE CAN FIT YOUR PRODUCT

JAS. H. MATTHEWS & CO.
3948 FORBES ST. • PITTSBURGH 13, PA.
NEW YORK • BOSTON • PHILADELPHIA
CHICAGO • CLIFTON, N. J.

BREVITY—Identify by IEN - 11108 If you write the maker

Nutting FLOOR TRUCKS WHEELS-CASTERS

"I'll Keep Things Moving For You!—The Boys all like my easy rolling style"

says the Nutting Trucker

A Great Variety of Standard Types

Save lost time, eliminate bottlenecks and wasted motions —increase production capacity by stream-lining handling of material with the type of Nutting Trucks suited to your work. For quicker delivery a great variety of standard types are available—bar handle, stake, platform, 2-wheel, box, rack, shelf and many others. Also rubber tired wheels and casters of all sizes for any truck.

Look in your classified phone directory for your local Nutting representative. If not listed write us stating kind of trucks you need.

Write for Bulletin 49G

our 60th year

NUTTING TRUCK AND CASTER COMPANY
2012 DIVISION STREET, FARIBAULT, MINNESOTA

BREVITY—Identify by IEN - 11109 If you write the maker

NEW...

Extremely sensitive

PRESSURE & VACUUM

Switches

TYPE SB

The new Type SB pressure and vacuum switches are for use in applications in which close on-off differentials and absolutely consistent maintenance of cut-in and cut-out settings are essential in the control of pressure or vacuum. Available are two pressure models and two vacuum models. The Pressure Switches have adjustable ranges from 0-15 psi and adjustable on-off differential from .1" wc-10" wc. They may be furnished as calibrated, micrometer type or uncalibrated for screw driver adjustment.

Electrical ratings at 125/250 V AC between 1200 watts and pilot duty depending on differential. The Vacuum Switches offer adjustable ranges from 30"-0" hg vac with adjustable on-off differential from .1" wc-10" wc. Furnished as calibrated micrometer type or uncalibrated with screw driver adjustment. Electrical ratings of both models 1200 watts at 125/250 V AC.

Special models available for requirements not included in the specifications above.

Write for new bulletin 4926 P giving complete details today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 11110 If you write the maker

THERMO-MAT keeps feet warm!

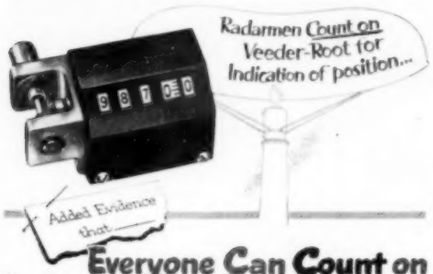
ONLY $11.95 DELIVERED

TAKES DISCOMFORT OUT OF COLD FLOORS!

THERMO-MAT radiates live penetrating heat from floor to knees! Insures foot and leg comfort wherever you stand or sit—in cabs, booths, at desks, check stands, counters and countless other locations! Melts ice and snow on doorsteps, etc. Safe and effective even on damp concrete. Economical—operates for a few cents per day. Reversible, long-lived neoprene rubber compound cover, lasts for years. Measures 14" x 22". Plugs into any 110-220 Volt electrical outlet. Maintains uniform temperature. Order by mail today! $11.95 delivered! Thoroughly tested. Thousands used. Performance guaranteed! Free Folder!

THERMO-MAT CO.
814-1 South Robertson Blvd., Los Angeles 35, Calif.

BREVITY—Identify by IEN - 11111 If you write the maker



Everyone Can Count on VEEDER-ROOT

LONG-RANGE EYES are what you really have here, in these Veeder-Root High-Speed Yardage Counters.
And anything else you need in the way of *Control*, you can get in standard or special Veeder-Root Counters, mechanically or electrically operated . . . deliveries depending on defense-work ratings, of course.
Just get in touch with the world's largest manufacturers of counting and computing devices . . .

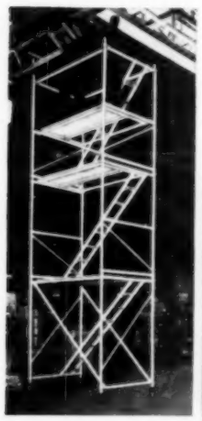
VEEDER-ROOT INC., Hartford 2, Conn.

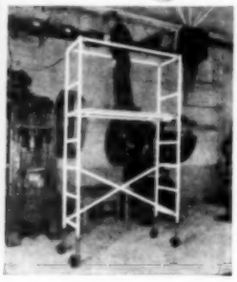
BREVITY—Identify by IEN - 11112 If you write the maker

BUY MORE "TIME ON THE JOB" with these ALUMINUM SCAFFOLDS

On almost any maintenance or electrical job one of the things you must consider is "set-up" time . . . how long it takes your men to *get ready* to work.

That's where these Aluminum Sectional Ladder Scaffolds and Aluminum Sectional Rolling Scaffolds save you time and money . . . by cutting "set-up" time to the bone and giving your men more "time on the job".





Here's why:

- It's easy to carry the light component parts to the job area.
- Scaffolds go up faster because of prefabricated design and snap-on braces.
- Scaffold quickly adjusts to proper height.
- Easy-to-climb stairways help get your men on the job . . . fast.

These easy-to-handle Scaffolds save time in dismantling, too. Non-rusting aluminum requires minimum maintenance. Used by leading maintenance men and electricians.

Get all the facts! Write for free Bulletins PSS-20 and PSS-22.

LADDERS and SCAFFOLDS FOR ANY PURPOSE
Any Place—Any Time

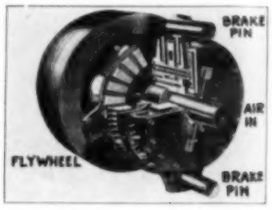
Gold Medal Ladders & Scaffolding — for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.
38-21 12th Street DEPT. IEN Long Island City 1, N. Y.
See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 11114 If you write the maker

DRIVE . . Pneumatic clutch-brake primarily for company's power presses

Source: E. W. BLISS CO.
1373-77 Raff Road, S. W., Canton 10, Ohio



Type K designates new single-disc air-operated clutch designed to mount on the outboard side of the press flywheel and between the flywheel and an outboard bracket carrying pins to engage a brake disc. A duplicate driving disc is pin connected to the flywheel. Both carry insert friction blocks for engagement alternately between the central air-operated driving disc and flanges forming an integral part of the clutch housing on the opposite faces for driving and braking action.

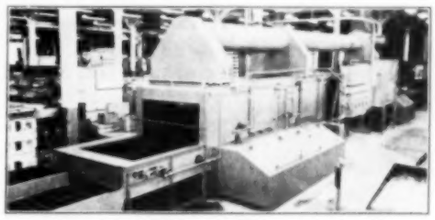
Compressed air admitted through an axial passage from the end of the shaft enters a cylinder space formed by the back plate on the clutch and the clutch body. It operates a ring-type piston against spring action to engage the driving side of the clutch. When the air is released the spring returns the clutch to brake-engaged position to stop shaft rotation.

The flywheel rides on roller bearings on the shaft while the clutch is keyed to it solidly. Vanes in the driving plate convert this unit, in effect, into a centrifugal blower to maintain air circulation for cool operation. Detail information covering construction and operation, with a section view, is contained in 12-page Service Bulletin A-1008.

BREVITY—Identify by IEN - 11115 If you write the maker

CORROSION PROOFING . . Machine carries work through to spray, dry, cool

Source: INDUSTRIAL WASHING MACHINE CORP.
287-91 Burnet St., New Brunswick, N. J.



Work rides on a belt

Work to be processed for corrosion proofing is placed upon the mesh conveyor at the load end of this new machine. It moves with the conveyor through a spraying section where rust-preventing liquid is sprayed from the top and bottom. It passes from there through an infra-red drying section where solvents in the liquid are vaporized and the surfaces are dried. It moves next through a cooling section and then issues from the opposite end of the machine. The conveyor passes under a rotating brush and through a solvent spray on its return run so it is clean on reaching the feed end.

The machine measures about 50 by 9 by 6 feet. It is protected from fire by a built-in carbon-dioxide installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11116 If you write the maker

McDonald SAFE T HAT and WINTER ACCESSORIES

These special cold-weather accessories make the famous "T" hat comfortable in the bitterest climate. Full protection of the tough aluminum-alloy shell, ribbed for extra strength . . . plus the shock-absorbing, fully suspended head band. Light-in-weight — 2 shell sizes provide quick and easy adjustment to fit all heads.

WINTER HEADBAND
Fleece-lined for cold weather comfort.

ZERO HOOD
(Shown in top illustration)
Provides ear protection

Heavy weight Zero Hood (Shown at left) for extreme cold with full ear and neck covering

Both Zero Hoods available in medium and large sizes

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

BREVITY—Identify by IEN - 11117 If you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

PHILLIPS PROCESS CO., INC.
192 MILL ST., ROCHESTER, 14, N. Y.
L. A. PHILLIPS, President

BREVITY—Identify by IEN - 11118 If you write the maker

TRY IT FREE!

TODAY'S BIG BUY IN CLEANERS

See also IDEAL "Hand-Type" Cleaners. BLOW—VACUUM—SPRAY—1-1/3—2/3 and 1/2 HP models.

the *All-Purpose* IDEAL "tank type" cleaner

For general vacuum cleaning—water pick-up—scrap collection

Cleans everything from ceiling to floor—efficiently and in less time! Super-powered with 1-1/3 HP motor, yet rolls as easily as a baby carriage. Hose swivels through full circle. Filtering system traps every bit of dust—bigger particles held in large steel tank. Compact—can't tip— heavy-duty for years of service. No other cleaner like it!

Sold Through America's Leading Distributors

MAIL COUPON TODAY FOR FREE DEMONSTRATION IN YOUR OWN PLANT

IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Ill.

Arrange FREE DEMONSTRATION of the IDEAL "Tank Type" Cleaner in our plant.

NAME _____
COMPANY _____
CITY _____ ZONE ____ STATE _____

BREVITY—Identify by IEN - 11119 If you write the maker

Link-Belt CAR SPOTTER releases manpower for other jobs

Speed spotting of cars for loading and unloading . . . reduce switching and demurrage costs to a minimum. One man with two or three turns of rope around the motor-driven capstan controls movement of up to six railroad cars. Stationary or portable. Integral or separate 5 or 10 hp motors develop 5,000 and 10,000 lb. rope pull.

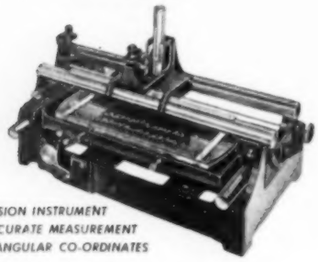
Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

WRITE TODAY
For 16 Page Bulletin 1992-A

LINK-BELT COMPANY:
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal cities.

BREVITY—Identify by IEN - 11120 If you write the maker

CAMBRIDGE UNIVERSAL MEASURING MACHINE



A PRECISION INSTRUMENT FOR ACCURATE MEASUREMENT IN RECTANGULAR CO-ORDINATES

This instrument measures, in rectangular co-ordinates, records, diagrams or photographic prints, films, or plates. It is suitable for checking reseau, the dividing of scales, pitch of micrometer screws, etc. Magnification x 12.

Write for bulletin L 14

CAMBRIDGE INSTRUMENT CO.
3710 Grand Central Terminal, New York 17, N. Y.
PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

BREVITY—Identify by IEN - 11121 If you write the maker

CAR SPOTTERS

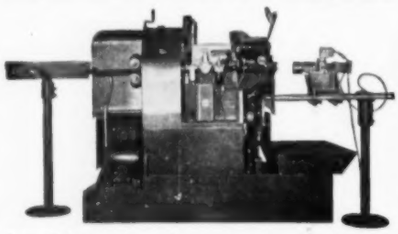
Spotting cars for loading or unloading — docking barges, handling moving operations in lumber yards, foundries or steel mills . . . that's the job for a Jeffrey Spotter. Two types—one to six cars.

Bulletin No. 842 gives specifications. Send for it.

JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth St., Columbus 16, Ohio

BREVITY—Identify by IEN - 11122 If you write the maker

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine—*any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½" .030 wall tubing, 5" lengths, every 2.5 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

These popular, time saving machines are now available in 4 sizes, handling work up to 6⅝" O.D.

Cut and chamfered at one time—in 8 sec.—from 10 ft. length of stock already threaded (⅝" U. S. Standard.) Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

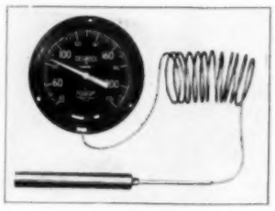
WRITE for CATALOG

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

BREVITY—Identify by IEN - 11123 If you write the maker

THERMOMETER . . Dial type, actuated by gas filled bulb and tube

Source: FOXBORO CO.
42 Neponset Ave., Foxboro, Mass.



Get Data Sheet 220-29

Uniform scale, aluminum case, stainless-steel trim characterize this new design of the company's Dye Tub thermometer, No. T-110-AM. It mounts a 5-in. dial, provides a range between 40 and 220 deg. F. It is equipped with 10 ft. of ⅛-in. stainless-steel capillary tube and a plain bulb as shown in the illustration for open tanks, or with a bulb that mounts a union fitting to assemble in closed vessels. The design is suited particularly for application in corrosive atmospheres. Diameter is 6¼ inches. Bulb length is 6 inches.

BREVITY—Identify by IEN - 11124 If you write the maker

ROOFS . . Bituminous coating to brush, spray or trowel on a roof

Source: MAINTENANCE ENGINEERING CO.
14-18 W. Johnson St., Philadelphia 44, Pa.

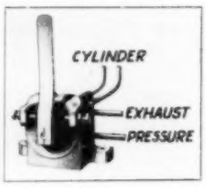
List price
$1.65 per gallon

Nuplastik is a new material in the company's line of roof coatings for application as supplied. The material adheres well to an old surface. It will not support combustion and when applied over a roof made of inflammable material it acts as a fire retardant. It is based on a bituminous resin in emulsified form. The applied coating is not subject to checking, cracking or peeling. Coverage is about 3 gal. per square. Packaging is in 55-gal. drums.

BREVITY—Identify by IEN - 11125 If you write the maker

VALVE . . Rotary 4-way design, for air or hydraulic pressure to 250 lb.

Source: WISLER ENGINEERING & MACHINE CO.
West St. & Railroad, Sturgis, Mich.



Lever points direction

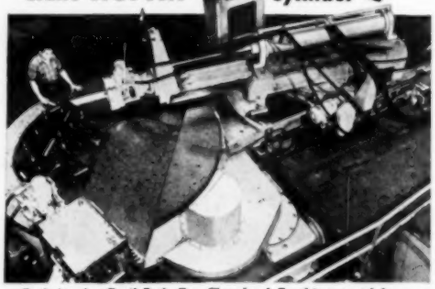
Screw adjustment is provided on the housing of this new Sincro valve to limit movement of the rotating element. The arrangement provides throttling action in the movement of a controlled-pressure cylinder. As a result there is no need for additional throttling in the lines leading to either cylinder head.

The valve can be set up for 4-way or 3-way operation. It is available with a hand lever, with a foot pedal and spring return, or with a foot pedal with rocker action. Four sizes have ¼ to ¾-in. pipe connections. The rotating element is sealed with O-rings. The disc and feet are ground and lapped together.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11126 If you write the maker

50-Ton Contour-Former Employs Giant NOPAK Cylinder



Built by the Cyril Bath Co., Cleveland O., this powerful machine is used to shape curved aluminum airplane fuselage parts. A NOPAK Model "A" 10" x 80" Hydraulic Cylinder . . . operating at 1500 P.S.I. . . . works in conjunction with the forming die, mounted on a gear-driven turntable, to stretch-form an infinite number of curved structurals . . . with 700 different dies now in use.

Very likely the efficiency of machines you build or use can be stepped up substantially through the correct use of NOPAK Valves and Cylinders.

GALLAND-HENNING MFG. CO., 2760 S. 31st Street, Milwaukee 46, Wis.

Refer to Sweet's File for Product Designers or write for Bulletin SW-1

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE
A 5984-1/9

BREVITY—Identify by IEN - 11127 If you write the maker

SAFETY IS CHEAP!

PROTECT WORKMEN from open conductor bars

Workmen cannot touch conductor bars on cranes or monorails when bars are enclosed in CON-L-DUIT, a specially compounded neoprene-base insulation. CON-L-DUIT leaves no gaps or openings for fingers or bars to enter. CON-L-DUIT *provides complete protection* on curves, straight runs, switches, interlocks and drop sections. It is inexpensive and easy to install. Made in sizes to fit all new or existing figure-8 conductor bar systems. CON-L-DUIT surpasses State Safety Codes. Dealers everywhere.

WRITE FOR CATALOG

CON-L-DUIT
APPROVED SAFETY ENCLOSURE

CALABAR CORP. South Gate, California

BREVITY—Identify by IEN - 11128 If you write the maker

DRILL CONCRETE 70% *Faster with* TILDEN ROTARY KONKRETE KORE DRILLS

Why? *Only Tilden has this patented slot . . . expels cuttings automatically!*

- Diameters 3/16" to 4" in stock
- Diameters above 4" made to order
- Interchangeable shanks up to 5 feet
- ⅛" to 1" drills cut up to 6" per min.
- Drills 200" before resharpening (including embedded steel, glass, rock)
- Free factory sharpening service
- Use with any electric or air drill
- Quiet operation - no hammer

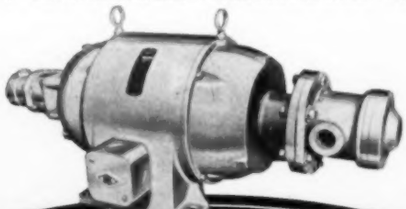
Write for FREE CATALOG today!

Tilden Rotary Konkrete Kore Drills are standard equipment with utilities, municipalities and thousands of contractors. Used by the U. S. Navy, Air Force and C. A. A.

TILDEN TOOL
MANUFACTURING COMPANY
209 Los Molinos • San Clemente, Calif.
BRANCH OFFICE
1184 W. Washington Blvd • Chicago 7, Ill.

SOLD BY BETTER SUPPLY HOUSES EVERYWHERE

BREVITY—Identify by IEN - 11129 If you write the maker



NEW HYDRAULIC PUMP MOTOR features standardized system for DIRECT ENDBELL MOUNTING

This new Reuland Hydraulic Pump Motor is factory adapted to the direct, endbell mounting of all makes of hydraulic pumps.

AUTOMATIC PRECISION ALIGNMENT — All motors are supplied with factory machined endbell flanges, pre-engineered to fit the registers on the pump mounting flange.

LOWER INSTALLATION COSTS — (1) only one unit to mount. (2) No time wasted in adjusting to proper alignment. (3) Fabrication of pump mounting platform is eliminated.

LOWER OPERATING COSTS — Pump life is almost doubled when alignment is perfect.

VERSATILE COMBINATIONS — Supplied with pump flange mounts on one or both endbells.

Write for new Engineering Folder No. 1000-11

REULAND ELECTRIC COMPANY
Alhambra, California • Representatives in all principal cities

BREVITY—Identify by IEN - 11130 If you write the maker

MULTICLONE Collectors offer unusual advantages in compactness and adaptability to the space limitations of industrial plants. They save space four ways . . .

1. **Greater Compactness:** The MULTICLONE unit itself requires less space—as little as 1/6 the floor space of comparable equipment.

2. **Maximum Flexibility:** MULTICLONE inlet and outlet hook-ups are readily adaptable to meet individual requirements. Side-inlet side-outlet . . . side-inlet top-outlet . . . and even top-inlet side-outlet construction is available for fitting cramped spaces.

3. **Simple Duct Requirements:** In contrast to the complicated ducts of conventional cyclones, the MULTICLONE requires only one simple inlet and outlet duct. Saves headroom, saves space.

4. **Fits Cramped Spaces:** Even the *shape* of the MULTICLONE can be varied to meet specific space needs . . . long and narrow, square, or short and wide!

WESTERN Precipitation CORPORATION
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. LaSALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

Besides compactness there are many other MULTICLONE advantages. For further details send for descriptive MULTICLONE booklet!

BREVITY—Identify by IEN - 11131 If you write the maker

How to Reduce Insurance Premiums

The installation of this 25,000-gal. Horton ellipsoidal-bottom elevated tank and an automatic sprinkler system resulted in a saving of $18,000 in insurance premiums annually for the Robertshaw-Fulton Company, Lynwood, California.

Horton elevated storage tanks frequently reduce insurance rates for many plants because the water reserve in these tanks is always ready to flow, under dependable gravity pressure, in case of fire.

When requesting quotations on Horton elevated water tanks, state capacity required, height to bottom, location and type of insurance carried. Horton Hemispheroidal-bottom elevated tanks range from 5,000 to 15,000 gals. capacity. Horton ellipsoidal-bottom elevated tanks range in capacities from 15,000 to 500,000 gals. Radial cone bottom Horton tanks from 500,000 to 3,000,000 gals.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 11132 If you write the maker

Carter* ROTARY POWER SUPPLIES

Made in a wide variety of types and capacities adaptable to communications, laboratory and industrial applications of many kinds. Famous for dependable performance. Specially engineered for compact size, light weight, long life. Precision built. Widely used for aircraft communications, direction finders, mobile radios, geophysical instruments, ignition and timing equipment, and many other exacting requirements.

★ MAIL COUPON FOR FREE CATALOGS

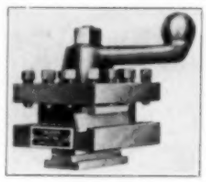
*Trade Mark Reg.

CARTER MOTOR COMPANY
3651 Maplewood Avenue
Chicago 47, Illinois
Please send Converter Catalog and Dynamotor Catalog, containing complete information on the entire line of Carter Rotary Power Supplies, and name of nearest distributor.
Name .....
Address .....
City ..... State .....

BREVITY—Identify by IEN - 11133 If you write the maker

LATHE TOOL . . Tool post turret applies on carriage compound slide

Source: CROZIER MACHINE TOOL CO.
652-56 N. Prairie Ave., Hawthorne, Calif.



$31 to $109

Twelve positions can be set up with this new four-side tool-post turret in combination with angle positioning of the compound slide on a standard lathe. Three models provide center-setting heights between 1 and 2⅝ in. for tools ⅝ to 1¼ in. in height. Grip width on the tool step is ½ to 1 inch. Standard equipment includes one cut-off tool and holder.

Index action is by hand after the clamping lever is moved to release position. Location for each index movement is by a detent mechanism after which the lever is returned to lock position. The turret is held on the lathe carriage by a steel stud and T-nut. The bottom of the turret is milled to provide an integral key that fits into the T-slot opening. Body dimensions in the three sizes measure, 3, 4 and 5⅝-in. square. Construction is in hardened steel.

BREVITY—Identify by IEN - 11134 If you write the maker

PAINTING . . Maintenance paint is resistant to staining, sheds dirt

Source: ENTERPRISE PAINT MFG. CO.
2839-43 S. Ashland Ave., Chicago 8, Ill.

For brush, spray roller coating

Staize-Clene trade names a new maintenance paint made under a formulation carrying U. S. Patent 2353910. The paint is available in 10 colors including a non-yellowing white for application on interior surfaces. Dirt does not adhere to the surface. Stains can be removed. The surface is water repellent.

BREVITY—Identify by IEN - 11135 If you write the maker

CLEANING . . Washing machine to soap and scrub work garments

Source: HOPKINS EQUIPMENT CO.
50 Maple Ave., Hatfield, Pa.

Just dip the work

A galvanized tray for soap solution and a pair of parallel motor-driven cylindrical brushes are mounted in the main housing of this new Scrub-O-Matic garment-scrubbing machine. The operator dips a soiled garment into the solution, then holds it and permits it to move down slowly between the two downward-moving brushes to provide the scrubbing action. Depressing a foot pedal separates the brushes. Pressing it as far as it will go stops the motor. The machine measures 37 by 21 by 34 inches. The motor rates 1 hp. and is available for operation on a standard ac. line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11136 If you write the maker

PAGE FENCE - Since 1883

• AMERICA'S FIRST WIRE FENCE •

Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence, now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.
PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 11137 If you write the maker

SPARE PARTS BOXES

to meet Government specifications

FOR ARMY AND NAVY ORDERS

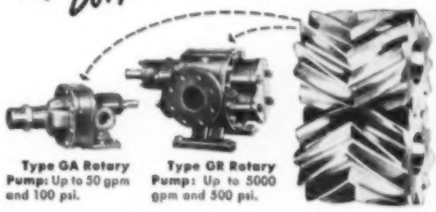
Many Army and Navy contracts require that spare parts be furnished in specially designed boxes. Stackbin has specialized in the fabrication of spare parts boxes to meet exacting Government specifications. The assemblage is complete, including all-welded sheet metal construction with proper fittings and hardware. In any quantity, in minimum time.

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 11138 If you write the maker

Light Duty or Heavy Duty



Type GA Rotary Pump: Up to 50 gpm and 100 psi.

Type GR Rotary Pump: Up to 5000 gpm and 500 psi.

Double Helical Herringbone Gear Rotors: Quiet and efficient; extra large wearing surfaces; no axial thrust; no trapping of liquid.

. . . The Same Sturdy Construction!

Both the light duty Type GA and the heavy duty Type GR incorporate the rugged herringbone rotors that operate so quietly and efficiently...combining with the whole advanced Worthington design for smoothest performance and longest, most economical rotary pump service. For further facts proving *there's more worth in Worthington*, write to *Worthington Pump and Machinery Corporation, Pump and Compressor Merchandising Division, Harrison, New Jersey.*

WORTHINGTON

P-0-3

BREVITY—Identify by IEN - 11139 If you write the maker

Conserve that Stainless!

If you possess any stainless steel of doubtful parentage, now is the time to identify it. Most stainless alloying elements are scarce—some have reached the critical stage.

Any mixed supplies of stainless steels you have in stock have become precious, and well worth sorting out.

To help you, Frasse engineering service has recently revised and reissued our Data Chart, Sec. A No. 3—which describes 10 simple methods for separating stainless from carbon and alloy steels, nickel stainless from moly grades, straight chrome from chrome nickel grades, etc. A detailed explanation of each testing method is also included.

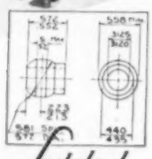
The chart is printed on durable cardboard stock, regular file card size, and can be filed, tacked on a wall, or slipped under glass for speedy reference. Send the IENquiry for your free copy today.

for Stainless Steels Call FRASSE 1st

Bars • Sheets • Strip • Plates • Angles • Wire • Tubing • Pipe • Fittings

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Jersey City • Philadelphia • Buffalo • Syracuse

BREVITY—Identify by IEN - 11140 If you write the maker



JOHNSON
Self-Aligning
BEARINGS REDUCE ASSEMBLY COSTS

Ledaloyl

Johnson Ledaloyl Bearings in numerous self-aligning styles are designed to slip into place and adjust themselves to shaft position. They require no machining, no fitting. They are produced by powder metallurgy and are self-lubricating. Catalog L-5 shows designs of items and lists sizes available from stock.

Write for your copy today.

SLEEVE BEARING HEADQUARTERS *Since 1901*

Johnson Bronze
476 SOUTH MILL STREET NEW CASTLE, PA.

BREVITY—Identify by IEN - 11141 If you write the maker

MODERN TIME AND COST SAVERS BUILT BY... *Standard*
GRAVITY & POWER CONVEYORS

LIFT OR LOWER— FLOOR TO FLOOR WITH A

STANDARD INCLINEBELT

Move boxes, cases, cartons, sacks or bundles from basement to first floor, or any floor to floor — continuously with the Standard Inclinebelt. Compact — simple to install — minimum maintenance and attention. Lifts or lowers 10 to 20 lbs. of live load per ft.; floor elevations of 8 ft. to 14 ft. 6 inches inclusive; two belt widths to handle commodities 15½ inches to 25½ inches wide.

Electric motor operated. Write for INCLINEBELT Bulletin — address Dept. IEN-111.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

BREVITY—Identify by IEN - 11142 If you write the maker

COMPARE

on every count
MODINE UNIT HEATERS
stand out

Compare performance! Modine's balanced combination of discharge air temperatures, velocity and volume gives you perfect heating comfort.

Compare economy! Fuel bills are smaller with Modine because heat is delivered where it's needed — not wasted at the ceiling. And installation and maintenance costs are far lower, too.

See the Modine Unit Heater line at your representative's showroom. Compare—and you'll choose Modine. Modine Mfg. Co., 1503 DeKoven Ave., Racine, Wis.

Ask for Bulletin 149A, "Modine Unit Heating." Also available — bulletins covering special applications in commercial brooder houses, greenhouses and milk houses.

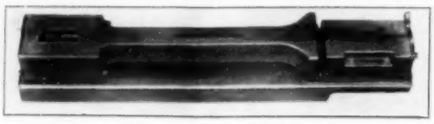
***Modine* UNIT HEATERS**
FOR FACTORIES • STORES • GREENHOUSES • COMMERCIAL BROODER HOUSES
MANY OTHER APPLICATIONS

U-1128

BREVITY—Identify by IEN - 11143 If you write the maker

COUNTING . . Wheel type unit counts length of sheet materials

Source: TRUMETER CO.
1265 Broadway, Room 406, New York 1, N. Y.



One user saved $22,000

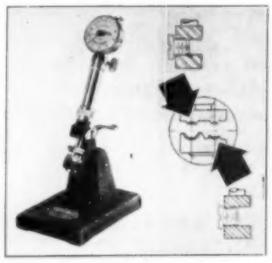
Three assemblies in the company's line of length counters for sheet materials are now available with a lever-operated device to print and deliver a ticket reading the length that has passed through since a previous zero setting. The device is characterized by its ribbon feed which advances with each impression. It prints between 600 and 700 times in black or blue, then changes to red to signal coming need for rewinding or replacement.

The assembly is about 3 ft. in overall length and is open at its left-hand end, as it is shown in the illustration, for insertion of the sheet material between the base and the wheel-equipped head. The counter is to the right in this view. The unit can be supplied for right-hand or left-hand action. It adds on forward movement, subtracts on reverse movement. The three designs in the line cover equipment to apply on any type of sheet material from silk, paper and plastics to heavy woolen cloth, carpets, plush, velvets.

BREVITY—Identify by IEN - 11144 If you write the maker

GAGE . . Dial comparator for threaded work to 1½ in. diameter

Source: HANSON WHITNEY CO.
167-71 Bartholomew Ave., Hartford 2, Conn.



Checks external threads

New anvil, built into the company's standard thread comparator, is dual design. It provides for accumulative check of lead, angle and pitch diameter as a measure of ability to assemble and also for specific check of pitch diameter and back taper, where the length of the threaded screw is shorter in dimension than the major diameter.

An obvious lead error, when a threaded part is positioned in one side of the dual anvil, inflates the indicator reading over the high limit. The operator can double-check such parts in the position to the right where two-thread engagement discloses causes of the high reading without having to resort to three-wire application or other inspection technique. Three sizes start at No. 0 threads and range upward to 1½ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Try the product index, page 118 for suggestions.

BREVITY—Identify by IEN - 11145 If you write the maker

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy. Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

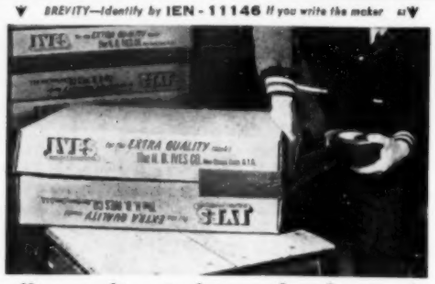
Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
1631 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 11146 If you write the maker



New packing technique for shippers!

Note, in the above photo, the wide gap between top and bottom sections of the Ives Company telescopic-type shipping carton. One 2" strip of *Polyken* Industrial Tape No. 261 takes care of this; forms a strong, waterproof seal that stands up under the roughest handling during shipment. No. 261 meets government specifications, has a tensile strength of 50 lbs. per 1" width. Sticks firmly to any type of shipping carton.

Ask your *Polyken* distributor or write for free folder, "Tape is a Tool." Address *Polyken*, Dept. IEL, 222 W. Adams Street, Chicago 6.

ONE OF THE NEW...
Polyken® INDUSTRIAL TAPES
TAILORED TO YOUR JOB
POLYKEN Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

BREVITY—Identify by IEN - 11147 If you write the maker

new, removable Kum-Kleen inspection stickers

Hundreds of industrial plants have found these Kum-Kleen *Removable* Inspection Stickers are far faster, safer and more efficient than string tags, chalk marks, grease pencil, or gummed labels. These pressure-sensitive Kum-Kleen stickers are quickly applied *without moistening*, and they stick-and-stay-stuck to all clean, smooth surfaces, never curl or pop off, yet easily peel off when their job is done. In stock for immediate delivery or available printed to your specifications.

WRITE FOR SAMPLES
ADDRESS DEPT. IEN-11

AVERY ADHESIVE LABEL CORPORATION — Kum-Kleen

NEW YORK CITY: 41 Park Row
DETROIT: 3049 East Grand Boulevard
CLEVELAND: 2123 East 9th Street
PHILADELPHIA: Commercial Trust Building
CHICAGO: 608 South Dearborn Street
CINCINNATI: 626 Broadway Street
MONROVIA, California
Representatives In All Principal Cities

BREVITY—Identify by IEN - 11148 If you write the maker

We've Built a BETTER HANDLE!

FOR MANUFACTURERS OF PORTABLE EQUIPMENT, CARRYING CASES, PARTS BOXES, Etc.!

- non-rattling
- rugged construction
- rust-proof
- meets Air Force and other Government specifications

Here is the handle you have been looking for—one that is ideally suited for anything that must be lifted by a side carrying handle. Because we could not buy anywhere a satisfactory handle for the thousands of cases manufactured by Bendix and needing such an item, Bendix-Friez engineers developed this handle to meet Air Force and other Government specifications for many kinds of special equipment. The unique, rugged design of this handle, with its "snap-back" feature, is such that neither shock nor vibration will cause it to rattle. Built of aluminum and stainless steel, it can be riveted or welded to the side surfaces of any kind of container or depressed in the sides. Available in large or small lots, orders filled promptly. Write for prices.

Bendix-Friez

FRIEZ INSTRUMENT DIVISION of Bendix
1328 Taylor Avenue
Baltimore 4, Maryland

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

BREVITY—Identify by IEN - 11149 if you write the maker

THIS IS IT!

World-wide recognition for this outstanding line of electric soldering irons—

HEXACON

—specified by the big names for the TOUGH JOBS!

WESTERN ELECTRIC
MINNEAPOLIS HONEYWELL
RADIO CORP. OF AMERICA
WESTINGHOUSE
STROMBERG CARLSON
EMERSON
KAISER
SPERRY
BENDIX
etc.

PLUG ON SCREW TIPS
40 to 700 Watts
1/8" to 1 1/16" Tip Dia.

Follow the leaders and you'll specify HEXACON! They'll efficiently solve your soldering problems! Write for literature.

Here's the famous HATCHET TYPE

These irons feature better balance for reduced operator fatigue. Efficiency is stepped up, and quality of work is improved. The ideal iron for inaccessible and intricate jobs.

HEXACON ELECTRIC CO.
155 W. CLAY AVE. ROSELLE PARK, NEW JERSEY

BREVITY—Identify by IEN - 11150 if you write the maker

Now! The OZAMATIC... Desk-Top Machine

MAKES DIRECT COPIES AT NEW LOW COST!

Makes a single copy in seconds . . . up to 1000 copies an hour

Ozalid's new Ozamatic produces clear, exact copies of anything drawn, typed, printed or written . . . any width up to 16", any length . . . on a variety of papers, cloths or foils.

It copies by light transmission at high speed—direct from any translucent original . . . at about 1½c per letter-size copy.

Ozamatic Saves Money . . . Eliminates double its cost, in waste time alone, in a single year. No retyping, no stencils, no negatives, no make-ready, no proofreading, because Ozamatic copies direct.

Large Volume From a Small Machine. Fits on a small desk, as shown above. Anyone can learn to operate the Ozamatic in five minutes. For opaque originals, all that is required is an inexpensive, fast, intermediary process.

WRITE FOR FREE Illustrated Literature. Tells you in full detail how Ozamatic can help boost your production . . . cut paperwork costs. Learn how easily Ozalid fits into your accounting, purchasing, shipping, order handling and receiving systems. In any business, any department!

Or call your local Ozalid distributor listed in the classified telephone book.

Cut Copying Costs . . . Use

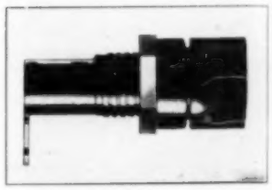
OZALID

Johnson City, N. Y. • A Division of General Aniline & Film Corp.
"From Research to Reality"
Ozalid in Canada—Hughes Owens Co. Ltd., Montreal

BREVITY—Identify by IEN - 11152 if you write the maker

FUSE . . Holder assembly for quick access to 3 AG fuse

Source: LITTELFUSE INC.
4755-59 N. Ravenswood Ave., Chicago 40, Ill.



For your panel boards

Cap nut on the right-hand end of this new fuse holder, as it is shown in the illustration, threads on the molded-plastic body and carries a small test-prod opening centrally located. A test can be made without removing the fuse. The body provides the shoulder and a threaded shank equipped with a locknut for assembly in a panel. The head-end contact extends along the shank. The rear-end contact is at right angles with the shank. A spring clip arrangement, integral with the side contact, permits application of safe pressure on the fuse to obtain good electrical contact. Overall length is a little under 1¾ inches. The two terminals provide for solder, wrap-around, or quick-disconnect connections.

BREVITY—Identify by IEN - 11153 if you write the maker

GAGE . . Ring equipped hook applies on end of flexible steel rule

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

No. 514-C is a new ring-equipped hook that clamps in place on the end of a flexible steel rule to register with the rule end and provide a means for holding the tape for one-man application. The hook fits any of the company's ¼ or ⅜-in. tapes. Construction is in cast brass with nickel-plate finish.

BREVITY—Identify by IEN - 11154 if you write the maker

SWITCH . . Selector push-button is key controlled to prevent tampering

Source: SQUARE D CO.
4039-43 No. Richards St., Milwaukee 12, Wis.

Ask for contact chart

Type TSK, Class 9001 is a new combination switch to provide both rotary selector and push-button functions in a single unit. The switch is available as a two or three-position assembly, can be equipped with a variety of cams and contact blocks to meet given requirements. It can be changed from one type of action to another in the field. Construction is oil tight. Contacts rate 6 amp., 110-volt ac. in normal operation. They rate 60 amp. inrush current maximum.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11155 if you write the maker

NEW PERMANENT NON-SLIP

FIRM-GRIP Genuine NEOPRENE LATEX GLOVES

Permanent NON-SLIP on all 5 Fingers and Palm
Highly efficient embossed surface is integral part of glove
Impregnable to ACIDS, CAUSTICS, OILS
Curved FINGERS for Comfort and Easy Use

No. 5740-5 LONG GAUNTLET
Length 14", Gauge .030 to .040
Sizes 9, 10, 10½, 11, 12
No. 5720-5 LIGHT DUTY
Length 10½", Gauge .017 to .020
Sizes 7, 7½, 8, 8½, 9, 9½, 10, 11

★ Write for sample and prices

SEIBERLING LATEX PRODUCTS CO.
AKRON 9, OHIO

200-5th Ave., New York
Merchandise Mart, Chicago

BREVITY—Identify by IEN - 11156 if you write the maker

Now! CONTROL AIR OPERATIONS ELECTRICALLY!

PUSH BUTTON OR LIMIT SWITCH CONTROL FOR
• AIR CYLINDERS
• AIR CIRCUITS
• AIR-OPERATED PRESSES

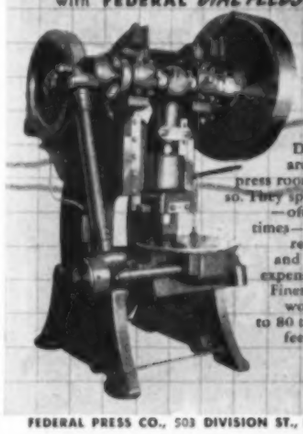
Quiet . . . dependable . . . economical. Unlimited range of applications. Ideal for remote control or for building into equipment. Two types. Ask for Hannifin recommendations.

GET BULLETIN 230
Contains specifications, dimension table, wiring diagrams and other useful data.

HANNIFIN
Hannifin Corporation • 1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 11157 if you write the maker

UP GOES PRODUCTION — DOWN GO COSTS!
with FEDERAL DIAL FEEDS



These rugged, precision-built Dial Feed Presses are pets in many press rooms. And rightly so. They speed production—often three to six times—cut down-time, reduce accidents, and eliminate more expensive equipment. Finest materials and workmanship. Six to 80 tons. Automatic feeds and ejectors if desired.

Write for Catalog

FEDERAL PRESS CO., 503 DIVISION ST., ELKHART, IND.

FEDERAL DIAL FEED PRESSES
26 YEARS OF QUALITY CONSTRUCTION

BREVITY—Identify by IEN - 11158 if you write the maker

TRIPLOC Plugs and Receptacles

1, 2, 3, 4, 6, 8 pole Interchangeable and reversible contact units

An Exceptionally Versatile Line in the Heavy Duty Field

An exceptionally versatile line, unequalled in the heavy duty field, with a virtually unlimited number of assembly combinations to meet the individual requirements of any portable electrical equipment.

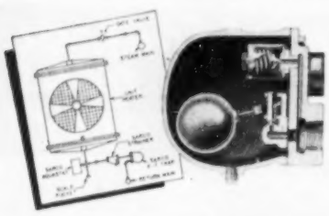
Interchangeable contacts, 1 to 8 poles, can be assembled in standard plug shells and receptacle housings. The protected female contact unit can be assembled in either plug or receptacle for safety in the line side of the circuit. Fusible types and units with one pole grounded are also available.

Automatic bayonet lock with either manual or combination manual and automatic release protects equipment and wiring. Wide range of pressed steel plug shells, receptacles, and cord connectors available in the complete Triploc line, including cast metal housings threaded for watertight gasket seal. Ratings up to 20 amperes, 250 volts DC, 460 AC. Consult your Pylet Catalog 1100, Bul. 1140-1, for complete listings.

CONDUIT FITTINGS • FLOODLIGHTS

THE PYLE-NATIONAL COMPANY
1348 NORTH KOSTNER AVENUE CHICAGO 51, ILLINOIS

BREVITY—Identify by IEN - 11159 If you write the maker



common sense approach to TRAP SELECTION for UNIT HEATERS

For efficient Unit Heater drainage you need a steam trap assuring high starting load capacity to deal with cold air and low steam pressure resulting from peak load.

You need continuous discharge of condensate and incondensables at or near steam temperature to prevent hot and cold air blasts.

SARCO FLOAT-THERMOSTATIC STEAM TRAP—Type FT, is unequalled for this service. The float operated main valve can be sized to handle the condensate loads from the lowest pressures up to maximum design pressure.

The action is instantaneous, no waiting to cool or for buckets to empty. The thermostatic air vent makes air binding impossible.

NEW BULLETIN 451 contains full information on latest improvements

SARCO COMPANY, INC.
EMPIRE STATE BUILDING, NEW YORK 1, N. Y.
Represented in Principal Cities
SARCO CANADA LTD., TORONTO 5, ONTARIO

512

BREVITY—Identify by IEN - 11160 If you write the maker

MECHANIZE 4 Scrubbing Operations into 1

with a COMBINATION SCRUBBER-VAC!

Here's a single cleaning unit that completely mechanizes scrubbing. It applies the cleanser, scrubs, rinses if required, and picks up—*in one operation!* The *self-propelled Model 213P* at right, for heavy duty scrubbing of large-area floors, has a 26" brush spread, and *cleans up to 8,750 sq. ft. per hour. Finnell* makes *Scrubber-Vac Machines* in a full range of sizes (no need to *over-buy* or *under-buy*) . . . available on either lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2611 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. FINNELL BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 11161 If you write the maker

NO "JACK KNIFE" ACTION HERE

—You cut with full hydraulic control

Users report several times longer blade wear with the W. F. Wells saw. Easy to see why, too! Here's a unit that feeds down EVENLY on the job—fully supporting its blade. You can select and hydraulically control BOTH speed of descent and blade pressure. Perfected by the pioneers in band saw manufacturing, these units will speed your production . . . reduce your cut-off costs.

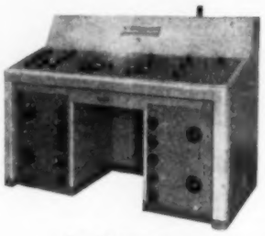
WRITE TODAY for complete literature covering bar feeds, coolant systems, and other accessories.

W. F. WELLS & SONS
Three Rivers, Michigan

BREVITY—Identify by IEN - 11162 If you write the maker

TESTING . . Desk assembly of instruments for magnetic materials

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



For laboratory use

Test desk, made of aluminum, measures about 5½ by 2½ by 4 ft. overall. It provides an inclosure for the instruments required to make routine dc. magnetization and hysteresis tests and simple flux measurements on soft magnetic sheet, strip materials, compositions such as alnico, silmanal, cobalt-platinum. The assembly weighs 600 pounds. Test range is maximum at 40 amperes. Operation is on 110-volt dc. and 60-cycle ac.

BREVITY—Identify by IEN - 11163 If you write the maker

LUBRICATING . . Bearing oil has ability to cling to metal surfaces

Source: MAGNUS CHEMICAL CO.
1951 South Ave., Garwood, N. J.

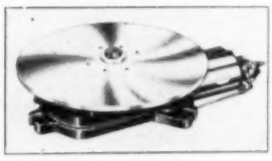
In 110 and 415 lb. drums

Kling-Oil is a new general-purpose machinery oil that is characterized by its tackiness and its ability to cling to the surfaces of machinery parts. At the same time it will not gum or build up in continuing use. Viscosity is SAE-30. It can be used in a circulating installation, but is recommended for individual application in bearings from which the oil is not removed ordinarily.

BREVITY—Identify by IEN - 11164 If you write the maker

INDEXING . . Pneumatic rotary table adjustable for 4 to 36 index positions

Source: BELLOWS CO.
230 W. Market St., Akron 9, Ohio



Electric control valve

Model BRET-22 is new design in the company's line of electrically-controlled pneumatically-operated rotary tables, previously described IEN-9744-48. The top will carry a load to 1,000 pounds. It measures 22 in. in diameter. The indexing action is cushioned to bring each position into place easily where it is locked by an air cylinder. Indexing control is by a 12-volt solenoid mechanism guaranteed against burn-out. The table top is removable to assist in set-up of jigs and fixtures or to place a table larger than the 22-in. diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11165 If you write the maker

In OUR Plant we mark parts in COLORS!

Yes, in *colors* for easier assembling, stocking, identification, etc. And industry is finding the Flo-master Felt-Tip Marker ideal for *all* types of marking. Its felt tip glides over any surface—metal, plastic, wood, etc. with broad, bold lines or fine lines. Flo-master semi-opaque inks—waterproof, non-smudging, fast-drying—come in a wide range of colors.

For light colored surfaces, use Transparent Inks with "POCKET SIZE" Flo-master. For dark, hard-to-mark surfaces, use Semi-opaque Inks with the "KING SIZE" Flo-master.

Ask your supplier or write to Cushman & Denison Mfg. Co., 153 W. 23rd St., N.Y.11

Flo-master
FELT-TIP MARKER

BREVITY—Identify by IEN - 11166 If you write the maker

SEND FOR THIS NEW MANUAL —20 pages packed with useful data!

This is a brand new section of the Cerro Alloys Application Data File. Its twenty pages are literally packed with valuable information and illustrations of the Cerromatrix Method of Punch and Die Setting—a method that saves untold costly man-hours of labor in the making of all kinds of metal-working dies: blanking, sectional, progressive, lamination, perforating, combination, compound, pierce and cut-off dies—or what-have-you. Write for your free copy today—on your letterhead, please.

CERRO de PASCO Corporation
(Formerly Cerro de Pasco Copper Corporation)
Dept. 6 • 40 Wall Street • New York 5, N. Y.

BREVITY—Identify by IEN - 11167 If you write the maker

IT'S HERE!

Grafo R-3

A Smokeless Colloidal Graphite

FORGING COMPOUND

that
Increases die life
Insures surface quality
Eliminates fire hazards

A WORKING SAMPLE SENT ON REQUEST

Other Grafo Colloidal Products Available For All Industrial Lubrication

"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION
MANUFACTURERS OF GRAFO COLLOIDAL PRODUCTS
299 WILKES PLACE
SHARON, PENNSYLVANIA

BREVITY—Identify by IEN - 11168 If you write the maker

MEET THE NEW MODEL

MUCKLE VENTS

Take a look at the new silhouette . . . it's low slung and streamlined—better looking on any roof!

Get away from old, "eye sore" ventilators—get the newly designed Muckle Vents. Engineering for better performance in moisture laden air—the motor is out of line of air flow. A compact, good looking, easy to install all-in-one unit to fit any roof.

Write today for more information on Muckle Vents.

Muckle MANUFACTURING CO.
OWATONNA 33, MINN.

BREVITY—Identify by IEN - 11169 If you write the maker

REALOCK FENCE

means what it says

Realock Fence provides real locked-in protection for your grounds and property. All fittings have bolts placed so that nuts are removable only from the inside ...thereby insuring safety from intruders.

Realock Fence is heavily galvanized by a special process...gives weather-resistant, durable service year after year with little or no expense for maintenance. Expert erection service is conveniently available.

For additional information write our nearest sales office or consult your classified telephone directory.

EAST: Wickwire Spencer Steel Division, Buffalo, New York
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

BRANCHES IN ALL KEY CITIES

BREVITY—Identify by IEN - 11170 If you write the maker

Preferred power for portable grinders and a wide range of other equipment for railroad maintenance — the world's most widely used single-cylinder gasoline engines on machines and tools for industry, construction, railroads, oil fields, and on appliances and equipment for farm and home.

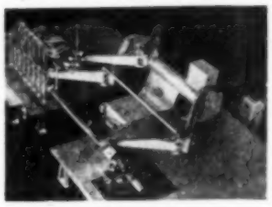
ONLY Briggs & Stratton can give you the benefits of more than 30 years of air-cooled power experience — gained in the production of more than 5,000,000 single-cylinder, 4-cycle, air-cooled gasoline engines. Briggs & Stratton Corporation, Milwaukee 1, Wis., U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

BREVITY—Identify by IEN - 11172 If you write the maker

CUTTING . . Acetylene torch machine, tracer control, for multiple torches

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.



"Many years of research"

Travograph No. 50 is a new pantograph, acetylene-torch cutting machine, it is available with manual, magnetic or electronic tracer to mount one or more torches that will cut out of a steel plate duplicates of the pattern followed by the tracer. Overall capacity is for circles to 144 in. in diameter, squares to 102 in., rectangles to 144 by 102 inches. Floor space required is about 28½ by 21 feet.

The machine mounts on rails between tracing and cutting tables and is equipped with an electronically-controlled motor for movement toward the front and rear. This movement is in combination with operation of the pantograph arms carrying the bar that mounts tracer and torches so the carriage motor will be started or stopped when the arms reach certain limiting positions in their swing in any direction. The arrangement positions the arms in most desirable working locations at any point around the circumference of a pattern.

Speed range at which the carriage will move is between 2 and 168 in. per minute. Controls center at the operator's position between the two tables. The company is prepared to supply a range of accessories for the machine.

Catalog 7, 12 pages, presents illustrated description of the machine with specifications, dimensions, data on tracer types.

BREVITY—Identify by IEN - 11173 If you write the maker

NIBBLING . . Portable electric tools have capacity for 18 and 14 gage steel

Source: JEFFERSON ENGINEERING & MFG. CO.
Walker & Franklin Sts., Detroit 7, Mich.

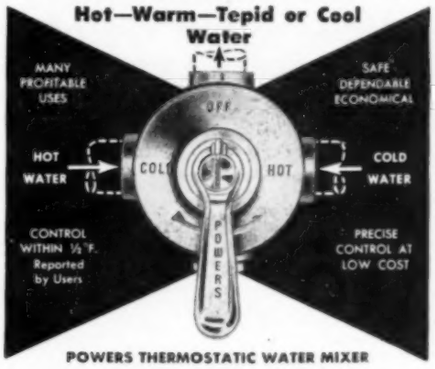
Follows any outline

Universal motor mounted on ball bearings drives a reciprocating cutter at high speed in the head of this new Jemco portable tool. Forward feed is about 3 ft. per minute. The motor is available for 110 or 220-volt input. The two tools, Model 50 and Model 75, weigh 5 and 10 lb. respectively. Both will cut corrugated sheets and along uneven surfaces. They will nibble out corners. Cutting can be started in the middle of a sheet when an access hole has been provided to accept the anvil.

The punch and die are interchangeable in sets and it is recommended that a spare set be kept for application when the initial set becomes dull. Lubrication follows removal of a screw to fill the reservoir with a light grease or heavy oil.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11174 If you write the maker



POWERS THERMOSTATIC WATER MIXER

Can It Solve a Problem for You?

Set a Powers Mixer for any temperature desired and forget it. Temperature remains constant regardless of fluctuations of *pressure* or *temperature* in water supply lines. Failure of cold water supply instantly shuts off delivery.

Is widely used for X-Ray and color film developing, hydrotherapeutic baths, chocolate enrobers and other processes requiring exact control. It is the safest regulator made for shower baths.

CAPACITY—10 gals. per min. at 45 psi. Dial diam. 5¼". Pipe connections ½". Temp. Ranges: 65° to 115°F.; 60° to 125°F.; 75° to 175°F. *Write for Bulletin 358-H.*

LARGER CAPACITIES up to 1000 gpm. available in other types of controls. *Write for Cat. 3035.* (HA)

THE POWERS REGULATOR COMPANY
3437 OAKTON STREET, SKOKIE, ILL.
Established 1891 • Offices Over 50 Cities • See Your Phone Book

BREVITY—Identify by IEN - 11175 If you write the maker

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.

A-443 Die handling trailer.

A-520 Medium height, 5th wheel steer trailer.

MERCURY

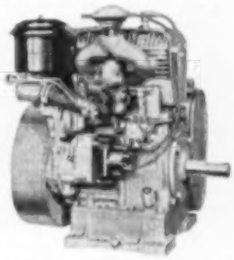
In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

BREVITY—Identify by IEN - 11176 If you write the maker

BREVITY—Identify by IEN - 11177 If you write the maker

POWER ADVANTAGE in the 7 to 13 hp. Range ...the 2-Cylinder WISCONSIN *Air-Cooled* ENGINES



This 2-cylinder engine fills the need for a power linkage between the single-cylinder and four-cylinder types. The user gets:

1. Dependable air-cooling under all climatic and weather conditions.
2. Self-cleaning tapered roller bearings at both ends of the crankshaft to withstand either side-pull or end-thrust without danger to bearings.
3. Rotary type high tension OUTSIDE Magneto with Impulse Coupling operates as an entirely independent unit that can be serviced or replaced in a few minutes.
4. Maximum torque at usable speeds for equipment that really has to go to work.

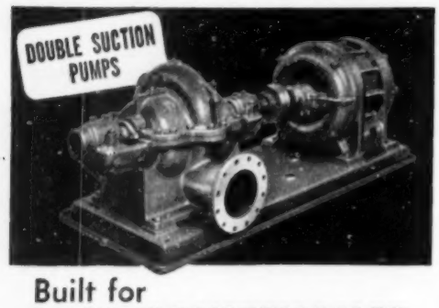
CONDENSED SPECIFICATIONS

MODELS		7B	9F
Bore	inches	3	3⅛
Stroke	inches	3⅛	3⅛
Piston Disp. cubic inches		45.9	53.9
Horsepower			
1400 rpm		7.3	8.6
2000 rpm		10	12
2600 rpm		11.2	13.3

Our engineering department will gladly cooperate with you in adapting Wisconsin Engines to your requirements. Write for detailed data and name of the nearest Wisconsin distributor.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

BREVITY—Identify by IEN - 11178 if you write the maker



Built for LOW MAINTENANCE

GENEROUS CONSTRUCTION with extra metal thicknesses, extra strong parts, extra construction features and extra careful workmanship means lower pumping costs for you. Every pump tested on most modern equipment in industry. Each installation individually engineered.

Horizontally split casing, ball bearings, balanced impeller, wearing rings, hand finished water passages, cast shaft sleeves, generous stuffing box length. Choice of iron, bronze, stainless steel.

Standard sizes from 10 to 7000 gpm with 475 foot head. Larger sizes available. For complete information, call your Allis-Chalmers Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin for bulletin 08B6146.

A-3320

ALLIS-CHALMERS

BREVITY—Identify by IEN - 11179 if you write the maker

SEE HOW GAST explosion-proof rotary AIR MOTORS helped solve this problem!

SEND FOR CATALOG IN SWEET'S FILE

Gast Application Ideas Booklet—showing 26 design problems solved — sent upon request.

PROBLEM: Specify a motor to drive liquid pump at variable speeds, for Bede Circulating Paint Heater. (A unit for faster, uniform hot finish application.)

SOLUTION: A Gast Rotary Air Motor, running below 500 r.p.m., drives pump at 150 r.p.m. Uses less than 30 p.s.i. air pressure.

RESULT: Power that's economical, dependable, safe. With explosion-proof Gast Motors, entire unit was approved by Underwriters' Laboratories.

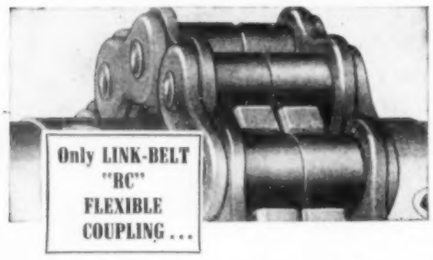
Your problem may be entirely different — yet the unique advantages of Gast Rotaries may offer just what your product requires. In sizes from 1/20 to 3 h.p., Gast Air Motors are amazingly compact and light in weight. And overloads can't burn them out!

Write Gast, describing your original equipment application. We'll send full details. "Air may be your Answer!"

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO ONE H.P.) (TO 28 INCHES) GAST MANUFACTURING CORP., 119 Oakley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 11180 if you write the maker



gives you single-chain simplicity plus divided rollers

YES, the exclusive design of Link-Belt "RC" Flexible Couplings combines these two desirable features.

The result: equalization of load, proper balance at high speeds . . . adjustment to reasonable misalignment and end float . . . simplicity and economy.

Link-Belt makes a complete line of Roller Chain Couplings from fractional to 1000 hp. You can get all the facts from Folder 2363.

"RC" Couplings available in 30 sizes, ½ to 12 in. bore.

★ LINK-BELT "RC" FLEXIBLE COUPLINGS

LINK-BELT COMPANY: Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices in principal cities. 52.525

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 11181 if you write the maker

ABRASIVES . . How to use them in tumbling described in booklet with suggestions on application

Norton Co.
36 New Bond St., Worcester 6, Mass.

Practical hints is the feature section of new 56-page pocket booklet, "Barrel-Finishing with Alundum Tumbling Abrasive". Abrasive selection, loading the barrel, tumbling speeds, cleaning materials, rinsing, unloading, suggested facilities and a typical room layout are included. Balance of the booklet describes properties and use of Alundum abrasive.

BREVITY—Identify by IEN - 11182 if you write the maker

BOILERS . . Cardboard slide calculator to figure cost of steam using coal, oil and gas fuels

Cleaver-Brooks Co.
324-28 E. Keefe Ave., Milwaukee 12, Wis.

Two steps enable you to figure cost of producing 1,000 lb. of steam, using new "Steam Cost Calculator" available on request. Fuel price is set on one of three scales opposite grade of oil or btu. rating of coal and gas. Steam cost then is read at a fourth scale opposite boiler efficiency. On the back is a slide on the company's 15 to 500-hp. self-contained boilers.

BREVITY—Identify by IEN - 11183 if you write the maker

CASTING . . Details on the Croning process to produce sand cores and molds for foundry use

Borden Co.
350 Madison Ave., Room 430, New York 17, N. Y.

Sketches show steps in operation of the Croning process in new 8-page bulletin, "Shell-Molding Process". They include pattern heating, application of a resin-sand mix, curing with heat, removal of the fused crust, pouring into the mold thus formed, removal of the casting. Notes are included on materials and equipment, molding and core-making cycles.

BREVITY—Identify by IEN - 11184 if you write the maker

CLEANING . . Application suggestions on materials to clean aircraft metal parts

Oakite Products Inc.
116A Thames St., New York 6, N. Y.

Procedures and equipment are described in revised 48-page edition of the company's pocket booklet, "How to Clean Metals in Aircraft Production". The application suggestions are based on the company's materials in preparing aluminum for anodizing, for spot welding, and for painting. They also cover cleaning magnesium for finishing, maintenance notes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

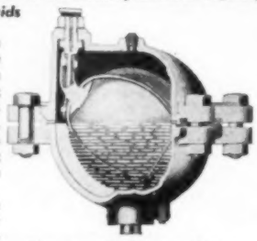
BREVITY—Identify by IEN - 11185 if you write the maker

How to get rid of ACCUMULATED AIR

in pipe lines carrying hot or cold water, industrial liquors, sewage and other liquids

The accumulation of air in water lines under pressure presents the engineer with many problems. Air, lodging at peaks in the line, reduces the effective area of the pipe, creates a friction head, lowers the entire line's pumping capacity, and may result in serious water hammer.

Simplex Air Release Valves bring a sure, efficient cure for these difficulties. Easy to install, simple in design, positive in operation . . . they vent accumulated air automatically before it can cause damage. To learn how *you* can avoid accumulated-air troubles, send without obligation for our new bulletin



Simplex Air Release Valve

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 30 years.

Write for free bulletin to Simplex Valve & Meter Co., Dept. 11, 6717 Upland St., Phila. 42, Pa.

IT'S SIMPLEX IT'S ACCURATE

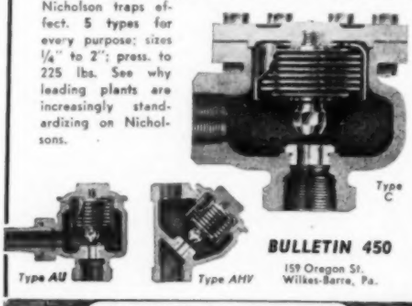
SIMPLEX VALVE AND METER COMPANY

BREVITY—Identify by IEN - 11186 if you write the maker

CUT DRYING CYCLE from 24 to 16 HOURS

with Nicholson Steam Traps

A large processor, by substituting Nicholson thermostatic traps for mechanical units, cut important drying operations from 24 to 16 hours, and refining cycles from 5 to 4 hours. They credit the higher and more even temperatures Nicholson traps effect. 5 types for every purpose; sizes ¼" to 2"; press. to 225 lbs. See why leading plants are increasingly standardizing on Nicholsons.



BULLETIN 450
159 Oregon St.
Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

BREVITY—Identify by IEN - 11187 if you write the maker

IMMEDIATE DELIVERY on Standard TRUMETER COUNTERS

TRUMETER

MECHANICAL COUNTERS *for most industrial needs*

• MEASURING • REVOLUTION
• PREDETERMINED • STROKE

Only years of research could evolve "TRUMETER" counters. Their uncanny accuracy and new features can save thousands of dollars. Drive shafts do not run through the figure wheels but are geared to same to insure longer life. Quick reset action on our Senior counters and quick preset lever action on our predetermined counters save time. The predetermined figure wheel is of a solid metal and brass combination with an ingenious setting and locking device.

Write for details of full line to:

TRUMETER COMPANY
1265 Broadway, New York 1, N. Y.

DISTRIBUTORS WANTED

BREVITY—Identify by IEN - 11188 if you write the maker

Need PRECISION Potentiometers?
Need SPECIAL Designs?
Need Potentiometer "KNOW-HOW"?

call Helipot

World's largest manufacturer of precision potentiometers!

HELIPOT offers a unique combination of unequalled "know-how", advanced manufacturing facilities and experienced personnel for solving *your particular* problems in the application of precision potentiometers to modern electronic circuits.

Suppliers to both Government and industry, HELIPOT has developed high speed winding, assembling and testing equipment that combine custom-built precision with mass-production economies. Multiple and single-turn designs . . . single and double shaft extensions . . . ganged assemblies . . . custom-spaced taps . . . multi-turn dials . . . *these and many other special features are part of the daily output at* HELIPOT!

If you have a problem requiring precision potentiometers, bring it to HELIPOT Corporation—*world leader in its field*. A call or letter outlining your problem will receive immediate attention!

A Typical Example . . .
This 10-Turn, Model "A" HELIPOT provides a 46" slide wire in only 1¾" dia. panel space. Resistance ranges—10 to 300,000 ohms, power rating, 5 watts. Can be ganged with multiple units per shaft . . . supplied with custom-spaced taps . . . and other special features.

Adaptable to a wide range of applications in experimental, military, industrial and educational fields. Write for data!

REPRESENTATIVES IN ALL PRINCIPAL CITIES
Export Agent: Fratham Co., New York 18, N. Y.

THE Helipot CORPORATION • SOUTH PASADENA 12 • CALIF.

BREVITY—Identify by IEN - 11189 if you write the maker

EXACT WEIGHT Kit for Master Checking

EXACT WEIGHT announces a new master set of weights for checking scales as well as packages in the plant. The complete equipment consists of a heavy duty service kit and strong carrying handle with all weights of brass finished in chrome plate as follows: fourteen 2 lb., two 1 lb., one 8 oz., one 4 oz., one 2 oz., one 1 oz., one ½ oz., one ¼ oz., one ⅛ oz., two 1/16 oz. A complete precision weight outfit . . . easy to carry . . . easy to work with. For full details write for new literature just published.

EXACT WEIGHT SCALES

Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 11190 if you write the maker

MORE SOLD THAN ANY OTHERS

Write for Catalog

OF USES AND SPECIFICATIONS

GENERAL

Industrial Pneumatic Tires

..SAVE TIME·LABOR·MONEY

Protect equipment and floors • Reduce Breakage

- ★ *Wide Base Wheel*
- ★ *More Air Volume*
- ★ *More Stability*
- ★ *More Load Capacity*
- ★ *Longer Miles in Hi-Speed Service*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

NEWS NOTES—Continued

"Booklet on ubf. fundamentals"

BREVITY—Identify by IEN - 11192 if you write the maker

CLEANING . . Information on degreasing, both on the process and on equipment, in new bulletin

Phillips Mfg. Co.
3473-77 W. Touhy Ave., Chicago 45, Ill.

"What is degreasing?" is the first question to be answered by new 12-page "Vapor Degreasers" bulletin. Text continues with a description of the process and its characteristics, internal views and production figures on representative equipment made by the company, both batch and conveyor models.

BREVITY—Identify by IEN - 11193 if you write the maker

COPPER ALLOYS . . Anniversary issue of house publication describes company's development

Chase Brass & Copper Co.
236 Frank St., Waterbury 20, Conn.

75th Anniversary issue of "Chase News" traces the company's growth, shows early facilities and equipment, its present plants, war activities, personnel, and even includes a note on the evolution of the company's centaur trademark. If you would like to see a copy, the company will be happy to send one while the supply lasts.

BREVITY—Identify by IEN - 11194 if you write the maker

ELECTRONICS . . Useful information booklet on fundamentals of ultra high frequency communication

Radio Corp. of America
1941 Front & Cooper Sts., Camden 2, N. J.

Introductory information is presented in new 40-page booklet to assist in training, installation, operation and maintenance of ultra-high-frequency electronic equipment. Title is "Ultra High Frequency Fundamentals". List price is 75 cents. Major topics include transmission lines, resonant sections, standing-wave measurements, cavity resonators, wave guides.

BREVITY—Identify by IEN - 11195 if you write the maker

ENGINEERING . . Booklet tells the part played by tool engineers in continuous plant modernization

American Society of Tool Engineers
10702 Puritan Ave., Detroit 21, Mich.

Results of a recent survey made among the Society's members are reported in new 24-page booklet, "Something Happened in 1950". It employs graphs to show relative number and size of industrial plants adopting a policy of continuous modernization, influence of executive groups in selecting type and make of equipment to be purchased, distribution of responsibility by size of the plant.

BREVITY—Identify by IEN - 11196 if you write the maker

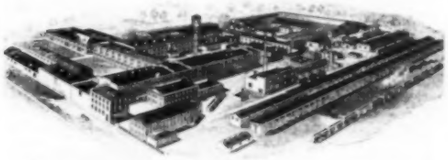
EQUIPMENT . . Need for maintenance stressed by company in special campaign week

Harnischfeger Corp.
4402 W. National Ave., Milwaukee 14, Wis.

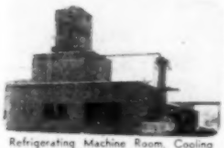
September 15 to 21 was National Service Week for some 700 dealers, branches and warehouses handling the company's equipment throughout the country. Each sales outlet carried out a program to make its customers aware of the need for proper maintenance, to inform them on how to go about it, to stock replacement parts, and to assist in operator training.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11197 if you write the maker



Big Tannery Cools Remarkable Storage with Frick Refrigeration



Refrigerating Machine Room, Cooling Tower and Condensers at the Byron Tannery

Two Frick Ammonia Compressors at the Byron Tannery, Williamsport, Md.

W. D. Byron & Sons of Maryland have operated a well known tannery at Williamsport since 1897.

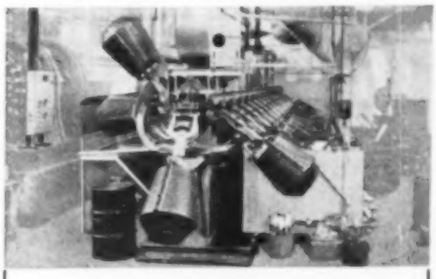
The hide storage room, measuring 96 by 46 ft., is now air conditioned by a special Frick system of the central-station type. Temperatures between 31 and 33 degrees F., and relative humidities of 85 to 90 per cent, are constantly maintained. (In a room that cold, such a high moisture content is most unusual.) Shrinkage losses are thus prevented, and the 600 tons of hides are kept in first-class condition. H. G. Burrill & Associates, Baltimore, consulting engineers.

Frick air conditioning, refrigerating, ice-making or quick-freezing systems can likely increase profits in YOUR business. Let us submit estimates: write, wire, phone or visit

FRICK Co.
REPUTABLE REFRIGERATION SINCE 1853
WAYNESBORO, PENNA. U.S.A.

Also Builders of Power Farming and Sawmill Machinery

BREVITY—Identify by IEN - 11198 if you write the maker



Presenting

THE NEW STEVENS SUPER "E" FULL AUTOMATIC BARREL PLATING MACHINE

Imagine one man processing 16,000 pounds in eight hours! That is what this new Stevens plating machine can do for you. Like the famous Stevens Model "C," the new Model Super "E" can be used for Cleaning, Pickling, Plating and Drying—and it will automatically unload the processed parts. All you do is load it—manually or automatically.

Designed primarily for the plating and finishing of bulky metal parts in large volume, the Stevens Super "E" will bring important savings to your operations. Low cost per piece or pound is immediately evidenced. Ask your Stevens representative for details or write *Frederic B. Stevens, Inc., Detroit 16, Mich.*

BREVITY—Identify by IEN - 11199 if you write the maker

KIPP *Air Grinders*

- FASTER SPEEDS
- BETTER RESULTS
- LOW PRICES

MODEL JA
50,000 R.P.M.
Weight 12 ounces, length 6½ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 11200 if you write the maker

HIGH EFFICIENCY

DUST CONTROL

with DUCON WASHERS

- Afford the most economical and efficient control and wet suppression of dust and fumes because of superior design and unique features.

- In addition to use for washing of air and gasses, DUCON Centrifugal-Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.
- Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.
- Construction steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for descriptive, illustrated Bulletin CW48-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 11201 If you write the maker

Carter

CUTS COSTS WAY DOWN!

CARTER GUIDE LINE LIGHTS

Carter Guide Line Lights throw a straight, black shadow-line across the work. Your guiding light to quick, accurate straight line sawing. Applicable whenever a guide line is needed.

Write—

For free illustrated folders

Carter Guide Line Lights are used for straight line sawing in leading plants of all kinds everywhere.

CARTER PRODUCTS COMPANY INC.

31 MOUNT VERNON, N. W. • GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 11202 If you write the maker

NEW CLASS I PANELBOARD IS FIRST WITH PLUG-IN BREAKER

Trumbull's new line of NLTQ Panelboards introduces the first *plug-in* circuit breaker with quick-make, quick-break. Also: thermal-magnetic protected, physically interchangeable breakers.

OTHER NEW FEATURES

Interior—spring-mounted, self-aligning.
Molded-in-plastisel busbar and stab assembly.
Sequence phasing—in all sizes

Write for Bulletin TEB-14

TRUMBULL (T) ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
Plainville, Conn.

BREVITY—Identify by IEN - 11203 If you write the maker

ELECTRIC COUNTERS LARGE or SMALL

Standard of Dependability for 25 Years

Standard, Panel Mounting and *Dustproof* Types.
For *built-in* applications, *photo-electric, remote,* and *centralized production* counting.
Almost *any* voltage, AC or DC.

PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.
Send catalog of Wizard Electric and Photo-Electric Counter applications.

Company _____
Name _____ Title _____
Street _____ City _____ Zone ____ State ____
W-14

NEWS NOTES—Continued

"Recommended equipment for screw driving"

BREVITY—Identify by IEN - 11204 If you write the maker

FASTENINGS . . Recommended equipment to drive company's screws summarized in bulletin

Parker-Kalon Corp.
202 Varick St., New York 14, N. Y.

Bulletin 401 has been prepared by the company to show you what types of equipment by other manufacturers is available to drive its self-tapping screws. The 4-page folder presents pictures and general recommendations on electric, pneumatic and impact tools, together with hopper-fed automatic machines. The company is prepared to name representative manufacturers on receipt of information concerning your problem.

BREVITY—Identify by IEN - 11205 If you write the maker

FLOORS . . Booklet on steel floor grating shows installation examples to suggest possible uses

Open Steel Flooring Institute Inc.
2311-A First National Bank Bldg., Pittsburgh 22, Pa.

Types and properties of steel floor grating are described at the start of new 16-page idea book, "Versatile Open Steel Flooring". This is followed by application pictures in a variety of installations with captions that stress the reason for its use. At the rear is a sample specification and a table of safe loads for 2 to 9-ft. spans.

BREVITY—Identify by IEN - 11206 If you write the maker

GRINDING . . Pocket instruction manual on how to grind alloy and high-speed steel cutting tools

Carborundum Co.
1942 Buffalo Ave., Niagra Falls, N. Y.

Methods of grinding cutting tools, typical tool setups, recommended clearance angles, grinding-wheel shapes and uses, wheel truing, are covered in new 72-page Booklet 10. It gives special notes applying to the various types of tools and a list of recommended wheel grades by service.

BREVITY—Identify by IEN - 11207 If you write the maker

HEATING . . Color sound film shows a variety of uses for induction heating

Allis-Chalmers Mfg. Co.
909 S. 70th St., Milwaukee 14, Wis.

Annealing, hardening, brazing, soldering applications are shown in new 16-mm. color sound motion picture, "Induction Heat—Industry's Modern Tool". Running time is 20 minutes. Prints are available upon request for group showing. A review is given in 12-page pocket Bulletin 15-M-7701.

BREVITY—Identify by IEN - 11208 If you write the maker

LIGHTING . . Booklet of suggestions on plant lighting for safety and security reasons

Westinghouse Electric Corp.
511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Outdoor lighting for industrial plants is described by new 24-page Bulletin B-4791, first from the standpoint of locations where trouble may develop, and second as to specific recommendations on illumination required. There is a lighting requirement table for typical plant areas. Drawings and tables present recommendations for these areas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11209 If you write the maker

A Journeyman's Tool, built to stand up under constant, on-the-job Contractor or industrial use . . .

● **NO STARTING HOLE NEEDED** . . . Simply place guide next to material and "rock" tool into an upright position.
● **CUTS RIGHT THRU IMBEDDED NAILS** . . . wood, plaster, iron pipe, sheet metal, "Transite" and most other materials—even in cramped quarters.
● **FITS HEAVY DUTY ¼" or ⅜" DRILL** . . . as easy as changing bits! Overall length only 10¾"; weight only 3 lbs. 6 ozs.
● **BUILT FOR CONSTANT DUTY OPERATION** . . Built-in blower keeps Super-Saw cool even when used continuously and blows sawdust away from cutting line. Replaceable "Oilite", phosphor bronze and high speed ball bearings throughout. Write for Bul. H-11.

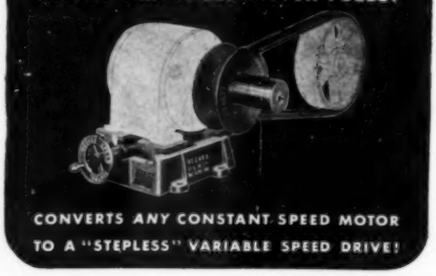
Cutting opening in cool flooring in less than 3 minutes—no starting hole needed!

Listed on Federal Supply Schedules. Class 40 Material.

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 11210 If you write the maker

REEVES VARI-SPEED MOTOR PULLEY



CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

2

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE *Catalog 1N11b G.*

REEVES PULLEY COMPANY · COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

BREVITY—Identify by IEN - 11211 If you write the maker

Its all in the *Heat Treatment*

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

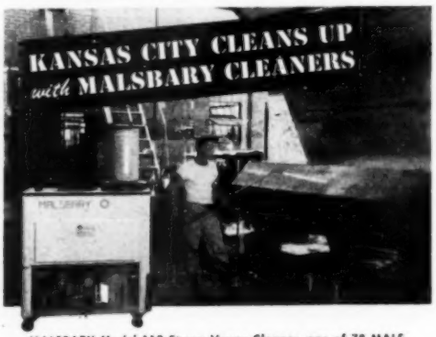
The "Tough" back to absorb hammer blows without crushing or distorting—The "SOFT" center to cushion the shock—The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

WRITE TODAY for ADDITIONAL INFORMATION

We are also manufacturers of—
- Special branding and knurling wheels .
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

BREVITY—Identify by IEN - 11212 If you write the maker



MALSBARY Model 110 Steam Vapor Cleaner, one of 78 MALSBARYS sold for flood clean-up, blasts silt and oil from vats, motors, pumps, walls, floors of Milk Producers Marketing Co. You, too, can remove grease from floors and machines, clean dirt and bacteria from hard-to-reach places, keep your plant spotless, maintain production equipment this labor-saving way.

MALSBARY 110 is gadget-free, rugged, dependable. No trained technicians needed. Gives you hot solution (50-100 p. s. i.) in 2-3 minutes. Let us demonstrate what MALSBARY can do for you in your plant. Write TODAY for folders and name of nearest jobber.

MALSBARY SINCE 1923 MANUFACTURING CO.
Room 711
845 92nd Ave.
Oakland 3, Calif.

BREVITY—Identify by IEN - 11213 If you write the maker

For Workers Who Need a **LIGHTWEIGHT, STRONG, DURABLE, GOOD-LOOKING** Acetate Goggle...

the **AO F9200** is the Buy!

Affords quality eye protection against flying particles coming from front. Also available with side shields when foreign objects endanger laterally. While used throughout industry in machine and hand tool work, chipping, grinding, riveting, bottling and welding with the recommended Calobar lenses, goggle fills a particular need in chemical and electrical plants, etc., where sparks are fire and explosion hazards. For adjustable nose pads ask for new FX9200 goggle. Your nearest AO Safety Products Representative can supply you.

American Optical SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

BREVITY—Identify by IEN - 11214 If you write the maker

We may KNOCK YOUR HAT OFF

with our Quote on SAVINGS and DELIVERY

If you're a Big User of Tiny Parts Such as These!

Sound like exaggeration? Not when you know the electronic tube industry looks to The Bead Chain Mfg. Co. for its millions of radio tube pins. Or, that builders of electrical apparatus turn to us for the contact pins, terminals, jacks and sleeves required in tremendous quantities.

PARTS FOR MANY MECHANICAL USES, TOO

For pin-like parts, and variations of bushings needed for *mechanical* purposes, as well, we are the money-saving supplier to scores of makers of toys, business machines, appliances, ventilators, etc.

You Save . . . if we can make it! We can almost say with certainty that if we can make that part you use in large quantities, we can show you a big saving.

Nobody has What We Have! To produce Bead Chain to sell for pennies per yard, we had to develop *our own Multi-Swage Method.* Instead of turning and drilling parts, or stamping and forming them, our Multi-Swage Method automatically swages them from flat stock into precision tubular forms, with tight seams. By increasing the production rate many times and eliminating scrap, this saves a large part of the cost by other methods.

What We Can Make. Parts may be beaded, grooved, shouldered, of most any metal. Generally, should not exceed ¾" dia. or 1½" length. *Standard Items* available in small quantity. *Special Designs* must usually be ordered in lots of a half-million or more, unless frequently reordered.

Get Catalog and Cost Comparison. Send blueprint or sample and quantity requirements. Or write for Catalog-Data folder. The Bead Chain Mfg. Co., 59 Mountain Grove St., Bridgeport, Conn.

Let **BEAD CHAIN** make it by

MULTI-SWAGE METHOD

BREVITY—Identify by IEN - 11216 If you write the maker

RESISTOR . . Wire wound design rates 25 watts, 1 to 12,000 ohms

Source: DALE PRODUCTS INC.
P. O. Box 326-IE, Columbus, Nebr.

Sheds generated heat

Type RH-25 is a new power resistor designed for sub-panel mounting. It employs an element wound on a refractory tube that is resistant to thermal shock. The wire is spot welded to nickel-alloy caps pressed on the refractory. Copper terminals are swedged and silver soldered to the caps and the complete element is coated with silicone. Over this coating are two servings of glass insulating sleeving.

The assembly is then impregnated in additional silicone material and sealed in a die-cast black-anodized finned housing. Tolerance ranges from 1 to 3 per cent over the resistance range of 1 to 12,000 ohms.

BREVITY—Identify by IEN - 11217 If you write the maker

RECTIFYING . . Selenium assemblies are available in 10 basic cell sizes

Source: SARKES TARZIAN INC.
413-17 N. College Ave., Bloomington, Ind.

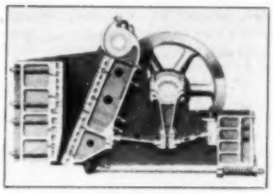
Samples available upon request

The company announces results of tests to add to the information on its line of selenium rectifiers, previously described IEN-4765-51. Tests that have been completed show the rectifier capable of operating without excess aging over a period of 1,400 hr. in ambient temperature of 100 deg. C. and at full rated loads. Based on these results the company is prepared to supply rectifiers guaranteed for operation for at least 1,000 hr. without derating at 90 deg. C. ambient.

BREVITY—Identify by IEN - 11218 If you write the maker

CRUSHING . . Jaw type machine for hard materials above 18 inches

Source: ALLIS-CHALMERS CO.
909 S. 70th St., Milwaukee 14, Wis.



No more toggle oiling

New design in the toggle and pitman assembly in the company's Type A-1 jaw crusher employs rolling contacts at the toggle ends to minimize wear and to make lubrication unnecessary. The design replaces conventional lubricated bearings. A rubber apron secured to the pitman, the backing plate and the jaw, covers the four toggle-bearing points to keep out foreign matter. The rear toggle is in riveted assembly, the rivets acting as shear pins to protect against serious overloading.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11219 If you write the maker

SPEEDY AIR VISE

SPEEDS UP

✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 11220 If you write the maker

BE FRESH... STAY FRESH

wear a

DUPOR No. 24

THE RESPIRATOR THAT IS U.S.B. OF M. APPROVED FOR TYPE "A" DUSTS

More than 24 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. Has all patented DUPOR features including bulb valve controlled breathing—panorama view with no blind spots. A favorite for years!

Sample sent $3.00 pp

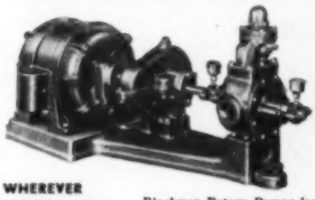
H. S. COVER
South Bend, Ind.

BREVITY—Identify by IEN - 11221 If you write the maker

IN HAND PUMPS
AS IN POWER PUMPS . . .

BLACKMER performance

SPEEDS LIQUID MATERIALS HANDLING



for **POSITIVE CONTROL OF MOST LIQUIDS FROM GASOLINE TO MOLASSES**

WHEREVER LIQUIDS ARE HANDLED

Blackmer Pumps enjoy preference based on performance in all types of industrial and processing plants. Learn why plant engineers prefer Blackmer.

Blackmer Rotary Pumps from 5 to 1500 GPM capacities . . . hand or power-operated . . . provide positive displacement and high suction lift with volatile or viscous liquids.

Get "FACTS" about Rotary Pumps

Write for "FACTS." Latest designs, operating and service features.

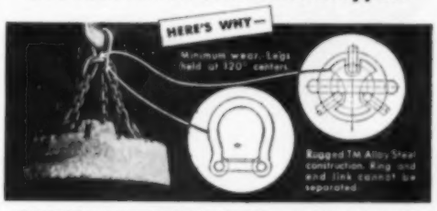
BLACKMER PUMP COMPANY
GRAND RAPIDS, MICHIGAN

BREVITY—Identify by IEN - 11222 If you write the maker

TM *Alloy Steel Downtown*

Frictionless
MAGNET CHAINS

DO MORE WORK, LAST LONGER, COST LESS than conventional types!



On-the-job tests prove TM Alloy Steel Downtown Magnet Chains superior to any other three-leg assemblies on the market. Patented design of end link and horizontal ring with special locating plate keep chain legs at 120° centers. This prevents ganging-up, excessive friction and twisting . . . assures level lifts. Long life, safety and economy is assured by TM Alloy Steel Construction. Great strength, high resistance to abrasion, grain growth and shock at sub-zero temperatures are only a few of the TM Alloy Steel qualities. Send coupon!

S. G. TAYLOR CHAIN COMPANY, Hammond, Indiana

S. G. TAYLOR CHAIN COMPANY
Dept. A, Hammond, Indiana
Rush literature and prices on TM Alloy Steel Downtown Magnet Chains.
Name _____
Address _____

TAYLOR MADE Chain

BREVITY—Identify by IEN - 11223 if you write the maker

Next winter, keep heat and heating costs from

"HITTING the CEILING"

Thermolier Unit Heaters are the most economical answer to many tough heating problems. Easy to install and to relocate at any time to meet changes in plant layout or heating requirements. Waste no valuable floor or wall space. Aim heat where you need it. You pay only for heat you use . . . instead of banking heat wastefully up at the ceiling. Heat is turned on and off by throwing a switch, manually or automatically by simple thermostatic controls. Thermoliers have a patented internal cooling leg which permits use of inexpensive, simple thermostatic trap. Write for full descriptive catalog.

Thermolier Unit Heaters

GRINNELL

Grinnell Company, Inc., Providence 1, R. I.
Branch Warehouses in principal cities.

BREVITY—Identify by IEN - 11224 if you write the maker

Production increased . . .
accidents decreased with

HYPRESSURE Jenny steam cleaner

Here are actual savings reported by four prominent manufacturers* who switched from hand cleaning to *Hypressure Jenny Steam Cleaning.*

MACHINE	Hand Cleaning	Hypressure Jenny Steam Cleaning	Man-Hours Saved
40 Ton Toggle Press	64 hrs.	3 hrs.	61 hrs.
72" Calender Machine	48 hrs.	5 hrs.	43 hrs.
Auto. Screw Machine	49 hrs.	5 hrs.	44 hrs.

*Names on request.

And keep in mind that they represent economies in actual cleaning time only. Additional savings of up to 40% in repair costs, less "down-time" for production machinery, and fewer lost-time accidents, invariably result when machinery, tools, equipment and floors are kept clean and free of dangerous, speed-retarding dirt and grease.

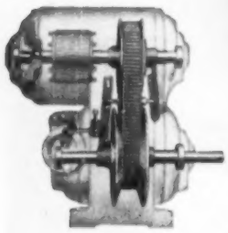
Complete details are yours for the asking. Write today.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving since 1866
P. O. BOX 85 CORAOPOLIS, PA.

BREVITY—Identify by IEN - 11225 if you write the maker

power modernization

means perfect speed control



STERLING
SPEED-TROL

OUTSTANDING FEATURES: Infinite speeds — positive speed regulation — fingertip control — large indicator — positive pulleys — no springs — protected — balanced design — streamlined — Herringbone Rotor — through ventilation — shielded ball bearings — versatile mounting — NEMA dimensions — shock absorbing quiet operation — rugged — compact — dependable — long life.

Ask for your copy of pictorial bulletin No. H-65, showing Sterling Electric Power Drives Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

NEWS NOTES—Continued

"How to resistance-weld nickel alloys"

BREVITY—Identify by IEN - 11226 if you write the maker

MANAGEMENT . . Catalog of sound films lists 1,400 training, educational, recreation subjects

Association Films Inc.
35 W. 45th St., New York 17, N. Y.

"Selected Motion Pictures", 40th Anniversary issue, is a 60-page illustrated booklet available on request. It describes available 16-mm. sound films and filmstrips including sponsored subjects for plant showing at no charge, entertainment films for rent, training films, civil defense films.

BREVITY—Identify by IEN - 11227 if you write the maker

METAL SPRAYING . . Methods and uses described in detail by new 250-page book

Metallizing Engineering Co.
38-16 30th St., Long Island City 1, N. Y.

"Metallizing Handbook" in its 1951 edition presents up-to-date information on surface preparation, application methods, finishing of sprayed metal. List price is $3. Subjects include metallizing of machine parts, corrosion-proofing surfaces, hard facing, miscellaneous uses such as sprayed electric circuits, properties of sprayed metal, ventilation and safety measures.

BREVITY—Identify by IEN - 11228 if you write the maker

MANAGEMENT . . Job and personnel analysis described by booklet that reprints six papers

American Management Association
330 W. 42nd St., New York 18, N. Y.

Publication 140 in the Association's Personnel Series is a 44-page booklet that reprints six papers presented at a conference early this year. List price is $1.25. Title is "Tools for Improved Personnel Relations". Subjects include productivity through management understanding, simplified job evaluation, employee self-appraisal, profit sharing.

BREVITY—Identify by IEN - 11229 if you write the maker

NICKEL ALLOYS . . How to weld them by resistance methods described in booklet

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Spot, seam, projection, flash welding and resistance brazing are covered in new 32-page Technical Bulletin T-33 on resistance welding of nickel and high-nickel alloys. Analysis and properties of typical alloys, process selection, design considerations, equipment considerations, welding procedure, defects, tests, are among the topics described. Sectional views show weld structures produced by resistance methods.

BREVITY—Identify by IEN - 11230 if you write the maker

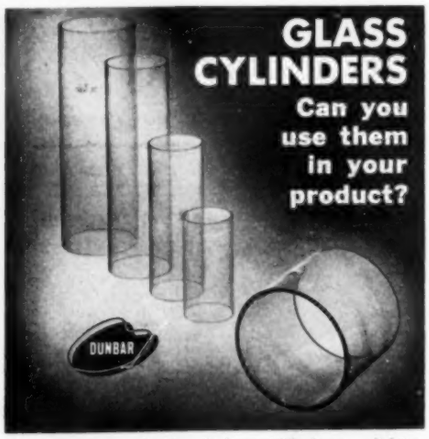
PRESSES . . Instruction manual on operation and maintenance of company's Type S-2 press

E. W. Bliss Co.
1373-77 Raff Road S. W., Canton 10, Ohio

Service Sheet A-109 designates new owner's manual which is supplied with each new Type S-2 press shipped from the company's plants. It is a 28-page looseleaf bulletin, contains instructions for installing, operating and servicing, together with part identification of this double-crank press.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11231 if you write the maker



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CUTS Your SWEEPING COSTS 75%

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BREVITY—Identify by IEN - 11236 If you write the maker

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But if a belt has to handle conditions not usually found on the average drive, then it has to be "prepared" for that job. If an oil condition is involved, the belt may be made with an oil-resistant cover, or, if the condition is extreme, the entire belt may be made of oil-proof construction.

Where generation of static electricity occurs, the V-belt is so compounded that it becomes a conductor of electricity.

Only U.S. Rubber gives you *all* of these 4 V-Belt advantages:

1. *Major part of inherent stretch worked out by mechanical means, yet enough elasticity is retained to allow belt to withstand severe shock loads.*
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4. *Unique Equa-Tensil Cord Section—exclusive with U.S. Rubber—which provides efficient pull and strength under diverse operations.*

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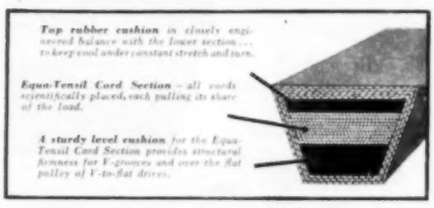

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FARM IMPLEMENT BELTS • SPECIAL PURPOSE BELTS

PRODUCTS OF

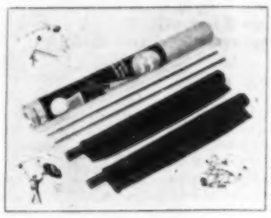
U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.

BREVITY—Identify by IEN - 11238 If you write the maker

SIGNALING . . Safety flags in carrying case to store on a truck

Source: A. G. BUSCH & CO.
2630-34 N. Central Ave., Chicago 39, Ill.



List price about $2

Two red flags made of canvas with wood handles and pointed steel spears are included in a new signaling kit. Flags and spears are packaged in a cylindrical container with metal ends designed to carry in a truck tool box. The flags can be set up on the ground or can be used as hand signals to attract attention to a stopped vehicle.

BREVITY—Identify by IEN - 11239 If you write the maker

PLASTIC . . Polyvinyl chloride in rigid bars, powders, sheets, tubes

Source: VAN DORN IRON WORKS CO.
2683-87 E. 79th St., Cleveland 4, Ohio

Company offers design service

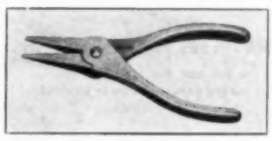
Lucoflex trade names a new non-plasticized polyvinyl chloride that is manufactured by the company into rigid bars, sheets, tubes. It also is available in the form of molding powder. It is resistant to most acids, alkalis and many special chemical solutions. Water vapors will not permeate it. Weight is about one half that of aluminum. Tensile strength is essentially the same as aluminum. The material remains serviceable in temperatures between minus 50 deg. and plus 177 deg. F. No exterior surface finish is required.

The company is prepared to supply the material in required form and also to fabricate it into tanks, liners, duct and piping layouts. Production is in sheets from 0.010 to 1 in. in thickness, rods to 1¼ in. in diameter, tubing to 4 in. in diameter with larger sizes made by forming and welding the sheet. The material can be machined, formed, welded.

BREVITY—Identify by IEN - 11240 If you write the maker

PRESS TOOLS . . Magnesium tongs to handle work in and out of dies

Source: MAGLINE INC.
1930 Mercer St., Pinconning, Mich.



Jaws stand normally open

The tapered nose on this new small magnesium tong assists in handling small work pieces into and out of dies where clearances are limited. The unit weighs 2½ ounces. As in previous designs by the company the tong crushes if it is accidentally caught between a punch and die, without damage to the die. It is a smaller unit in the line previously described IEN-1751-51.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11241 If you write the maker

BREEZE Job-Engineered BELLOWS

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
41-V S. Sixth St., Newark 17, N.J.

OTHER BREEZE PRODUCTS: ACTUATORS • RADIO SHIELDING • AERO-SEAL HOSE COUPLINGS

BREVITY—Identify by IEN - 11242 If you write the maker

On-the-job servicing of Hansen Tackers is speeded up by the Take-up Jaw. Quick as a flash it opens or closes and provides for cleaning and reassembly—in seconds!

Wherever tacking or fastening operations are required use Hansen with its time-and-money-saving features.

REQUEST BOOKLET

A. L. HANSEN MFG. CO.
5051 Ravenswood Ave.
Chicago 40, Ill.

Open and Shut HANSEN FEATURE *that means split second* ON-THE-JOB INSPECTION

Hansen ONE-HAND TACKERS

BREVITY—Identify by IEN - 11243 If you write the maker

BREVITY—Identify by IEN - 11244 If you write the maker

Versatile

aid for plant maintenance men

HEIN-WERNER HYDRAULIC JACKS

. . . make pushing and lifting jobs easier

These easy-operating, super-powerful jacks can be used to move, lift or push machinery, equipment, stock bins. Also can be used for pulling gears and pinions, bending pipe and pressing bushings.

Made in models of 3, 5, 8, 12, 20, 30, 50, and 100 tons capacity. Hein-Werner also makes "Push and Pull" Hydraulic Jacks of 4, 10, 20 tons capacity. See your industrial supply distributor or write us.

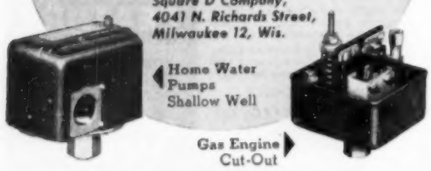
Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

▼ BREVITY—Identify by IEN - 11245 if you write the maker ◄▼

SQUARE D for a
Complete Line of H. P. Rated
Water Pump Switches

Write for BULLETIN 550,
Square D Company,
4041 N. Richards Street,
Milwaukee 12, Wis.



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SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

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Generalift ★★★★★
PALLET BOXES

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GENERAL BOX COMPANY..
★★★★★ engineered shipping containers

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▼ BREVITY—Identify by IEN - 11247 if you write the maker ◄▼

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NEWS NOTES—Continued

"Booklet on how to design and specify springs"

▼ BREVITY—Identify by IEN - 11248 if you write the maker ◄▼

PUMPS . . New laboratory will test pumping and spraying properties of your materials

Gray Co.
2122-26 Fairmount Ave., Philadelphia 30, Pa.

Adhesives, coatings, sealers and greases are typical materials which the company is prepared to test for ability to pump and spray in application. It has set up a new laboratory for this purpose, particularly to handle materials from original container to point of use by mechanical means. You are invited to submit samples for free test.

▼ BREVITY—Identify by IEN - 11249 if you write the maker ◄▼

PUMPS . . Color-coded charts in bulletin show corrosion resistance of company's pump materials

Milton Roy Co.
1302 E. Mermaid Lane, Philadelphia 18, Pa.

Green, yellow and red blocks are used in a tabulation of 170 chemicals to indicate recommended use, use with caution and no use for 11 metals in which the company's Controlled-Volume pumps can be supplied. The chemicals range from Acetaldehyde to Zinc Sulphate. Balance of the text describes design and operation. Schematic drawings show representative applications for the pump.

▼ BREVITY—Identify by IEN - 11250 if you write the maker ◄▼

SPRINGS . . Booklet of suggestions on how to design, specify and purchase springs

Newcomb Spring Corp.
3904 Seventh Ave., Brooklyn 32, N. Y.

Sixty-six suggestions are listed in new 8-page Bulletin NS-500 to help you simplify design and minimize cost. They are grouped under general topics such as extension, torsion, compression springs, gages, finishes, materials, hydrogen embrittlement, purchasing. A table lists 16 spring materials.

▼ BREVITY—Identify by IEN - 11251 if you write the maker ◄▼

STEELS . . Specifications on stainless for Government use listed by new data chart

Peter A. Frasse & Co.
17 Grand St., Dept. IEN, New York 13, N. Y.

Chemical analysis requirements are tabulated by new chart for 37 military, Army, Navy, aeronautical and Federal specifications on stainless steels. Also listed are specified forms and the nearest corresponding SAE, AISI and AMS type numbers for the steels. The chart measures 11¾ by 9½ in., is printed on both sides of a cardboard file sheet. Ask for Sec. A No. 2 when you write.

▼ BREVITY—Identify by IEN - 11252 if you write the maker ◄▼

STEELS . . How many pieces you can cut of a given size from a longer piece, shown in booklet

United States Steel Corp.
525 William Penn Pl., Room 4284-A, Pittsburgh 30, Pa.

"Tables of Multiple Lengths" is a 72-page book, available on request, to assist in minimizing waste when cutting steel to size. It lists multiple lengths in feet and inches for a given unit length in inches. It also gives the number of unit length per piece. Unit lengths range from 1 to 60$\frac{11}{16}$ inches. No allowance is made for material loss in recutting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11253 if you write the maker ◄▼

If you use tubing to convey liquids, gases or semi-solids, Titeflex can help you do it better at less cost. Titeflex flexible tubing is made in brass, bronze, stainless, Monel and Inconel. It's made in types and sizes to withstand temperatures to 1550°F. and pressures to 6800 psi. It's available in a full range of sizes, complete with any required styles of fittings. In addition, Titeflex is all-metal. Regardless of the operation, it is more resistant to fatigue . . . it will stand up longer and give better service.

Write us for catalog outlining Titeflex advantages in full.

Titeflex, Inc.
506 Frelinghuysen Avenue, Newark, N. J.

TITEFLEX FILLS TUBING REQUIREMENTS TO A . . T

▼ BREVITY—Identify by IEN - 11254 if you write the maker ◄▼

FOOT CONTROL varies WELDING HEAT!

Patent No. 2308199

Mullenbach ARCTROL

Unusual control on precision welding • Gives full-scale, remote control • Instant variations without breaking arc • Saves trips to the welder • Eliminates cratering • Gives hot starts • Increases welding speed • Regular welder operation and range unaffected.

Available for most makes of D.C. welders. Write for information giving welder name and model number.

MULLENBACH Electrical MANUFACTURING COMPANY
2300 EAST 27th STREET LOS ANGELES 58, CALIFORNIA

▼ BREVITY—Identify by IEN - 11255 if you write the maker ◄▼

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REDUCE COST • SAVE TIME

This Catalog of Improved Pyrometer Supplies shows you how!

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ARKLAY S. RICHARDS CO., Inc.
NEWTON HIGHLANDS 61, MASS.

▼ BREVITY—Identify by IEN - 11256 if you write the maker ◄▼

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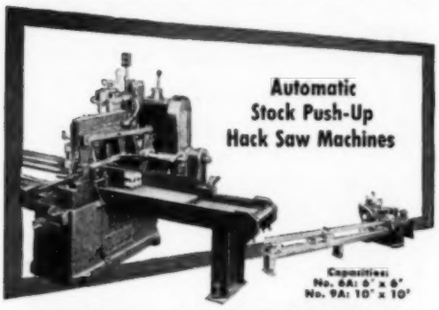
"A CLAMP FOR EVERY PURPOSE
CHISELS BRACE WRENCHES
PUNCHES MASONRY DRILLS
STAR DRILLS WASHER CUTTERS

THE CINCINNATI TOOL COMPANY
1953 Waverly Avenue • Cincinnati 12, Ohio

There is an Industrial Distributor stock near you

BREVITY—Identify by IEN - 11257 if you write the maker



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These automatic stock push-up hack saw machines are not new. MARVEL built the first practical bar feed hack saw machines, over 30 years ago. The sound, proven, basic principle of these machines has never changed—but they have been constantly improved and refined. Today they are still the leaders—the most practical, fastest, most accurate, most productive cutting hack saw machines built. No matter what your cut-off work, let us recommend the MARVEL saw that will give you true economy, speed and accuracy at an attractive price.

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MARVEL Metal Cutting **SAWS** Better Machines—Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U. S. A.

BREVITY—Identify by IEN - 11258 if you write the maker

Kimpak® Float Packaging

Cuts shipping costs—reduces damage in transit!

Have you ever received a compliment on the packaging of your products? Have you ever been told by a customer that your products always arrive in perfect condition? Most companies never do, until they switch to KIMPAK* Float Packaging—the world's cleanest, most effective shipping protection.

KIMPAK not only makes your package look "well dressed" but affords optimum protection at low cost. Soft, snowy-white KIMPAK is available in various thicknesses and in a wide range of roll and sheet sizes to facilitate your packaging operation. So KIMPAK saves literally hours in the shipping room—then defends against damage from shock, scratching and vibration. It cushions your product during rail, truck, air or water transit, as well as in storage.

Try KIMPAK soon. For complete information, see your nearest KIMPAK distributor listed in classified telephone directories under "Packing Materials" or "Packing Materials—Shipping." Or write to Dept. IEN, Kimberly-Clark Corporation, Neenah, Wisconsin.

Kimpak REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

A Kimberly-Clark Coated Wadding Product

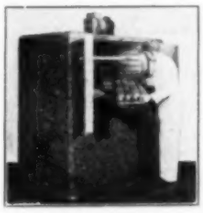
PROTECTIVE CUSHIONING

*REG. U. S. PAT. OFF. & FOREIGN COUNTRIES

BREVITY—Identify by IEN - 11260 if you write the maker

HEATING . . Electric oven, forced convection design, to 500 deg. F.

Source: DESPATCH OVEN CO.
617-21 S. E. 8th St., Minneapolis 14, Minn.



Follows laboratory design

Series V, No. 31 and 35, with single compartments, No. 33 and 37 with two compartments each make up a new line of electrically-heated forced-convection ovens for production use. Compartment width is 37 and 48 in. in the single units, 18 and 24 in. in the double assemblies. Depth is 25 and 30 inches. Height is 50 and 42 inches. Input rating is 12 and 16 kw. The circulating fan is driven by a ¾-hp. motor and rates 1,400 cfm. on ¾ in. of static pressure.

The steel housing encloses 3 in. of rock-wool insulation. An operating compartment at the right-hand side contains the driving motor and mounts the control equipment. Air is drawn in from the outside, is expanded by heating and thus provides pressure in the work chamber to exhaust volatile gases. A forced-exhaust can be provided to discharge large quantities of gases when explosive volatile materials must be handled. This forced exhaust adds 14 in. to the oven height.

BREVITY—Identify by IEN - 11261 if you write the maker

PLATING . . Chemical additive for bright plating in a still tank

Source: HANSON-VAN WINKLE-MUNNING CO.
100 Filbag St., Matawan, N. J.

Bright dipping not essential

BSZ-300 is a new brightening additive for use with the regular cyanide solution in a zinc-plating tank. It produces a bright to brilliant deposit directly from the plating bath. The plating improves corrosion protection, provides a pleasing appearance. It accepts conversion coatings and can be soldered. Covering power is excellent.

BREVITY—Identify by IEN - 11262 if you write the maker

TRUCK . . Hand box design with mounting on 4 or 5 in. casters

Source: INDUSTRIAL ENGINEERING & MFG. CO.
801 Main St., Brimfield, Ind.

Simple, husky, handy

Stock Toter trade names a new hand truck made of 12-gage steel on a 1½-in. angle-iron frame mounted on 4 or 5 in. casters. Overall dimensions are 30 by 24 by about 34 in. when 4-in. casters are employed. Standard depth of the container portion of the top is 10 inches. The sides and bottom of this part of the assembly can be made of expanded metal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11263 if you write the maker

CAL-WIC WIRE CLOTH

In all Meshes, Weaves and Weights

Filtering, screening or grading—whatever your special job demands may be—Cal-Wic Wire Cloth is available in the right mesh, weave or weight to meet your requirements. Resistance to corrosion, abrasion and temperature extremes assured through the use of appropriate metals and alloys.

The long-wearing qualities of Cal-Wic Wire Cloth take on added importance during times like the present.

For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado.
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, Calif.

CAL-WIC INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

BREVITY—Identify by IEN - 11264 if you write the maker

SPEED UP COMPOUND MELTING with STA-WARM HEATING TANKS

● Name your compound melting requirement! Sta-Warm will suggest *exactly* the tank or pot in their wide and varied line to produce the heated compound you need at the rate you need it.

Or, their engineers will analyze your special problem and design the unit to do your job as you want it done.

Heating and dispensing unusual compounds and tailoring melters to unusual production set-ups is all in the day's work for Sta-Warm engineers. Put specialized Sta-Warm "know-how" to work for you.

The *right* equipment can break your compound melting bottleneck. Write for Sta-Warm recommendations or bulletins today.

Shown at right (above) is 25 gal. melter with molasses gate valve. Below it is 5 gal. bench type dispenser with needle valve orifice. Both models equipped with variable thermostat controls and power driven agitators.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 11265 if you write the maker

VERSATILITY on wheels!

You can't stump Stevedore, Jr.* with a tough job. This portable, power-driven belt conveyor is designed for all kinds of package and bag handling. Used alone or in combination with other conveyors, it is the most economical way to load or unload trucks or boxcars . . . move materials into balcony bins . . . or stack at a convenient height. Stevedore, Jr. can be easily rolled from job to job by one man. Available in 10" and 16" belts.

Write for prices and free catalog

The RAPIDS-STANDARD CO., Inc.
432 Rapistan Building
Grand Rapids, Michigan

Rapistan® CONVEYORS

*T. M.

Representatives in Principal Cities

CONVEYORS: *Power or Gravity, Movable or Fixed.*
Also a complete line of CASTERS & HAND TRUCKS

BREVITY—Identify by IEN - 11266 if you write the maker

Easy-handling JOHNSON general-purpose clamshell

FAST OPERATING

Big-diameter sheaves, with sealed-in needle bearings, cut friction power loss, deliver full digging power to the cutting edge.

ALL-WELDED

Smooth, fast cleaning, heavy-duty. Hard manganese cutting edge welded to lips toughens with use, assures extra long life.

LET US SHOW YOU SAVINGS ON YOUR WORK

10 SIZES
⅜ - ½ - ⅝ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ - 3 yds.

THE C. S. JOHNSON COMPANY
Champaign, Ill.

Send us complete facts on _____ yd. General-Purpose Clamshell.

NAME .....
TITLE .....
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CITY ..... STATE .....

KOEHRING SUBSIDIARY

BREVITY—Identify by IEN - 11267 If you write the maker

NEW! DUMORE PRECISION DRILL GRINDER

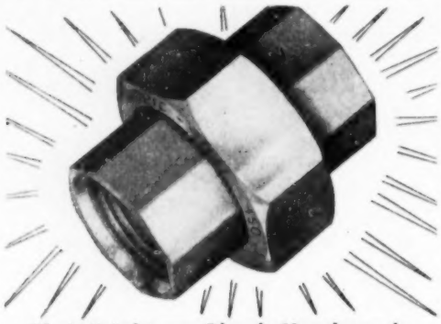
...licks your 3 big problems in small-hole drilling

CUTS DRILL COSTS Dumore precision sharpening pays off in less drill breakage, longer drill life between grinds.
INCREASES PRODUCTION Correct drill point and clearance angle are instantly set on the Dumore Drill Grinder. Result is correct hole tolerance, less scrap.
SIMPLIFIES HELP PROBLEM Any operator can grind his own drills correctly. Or, if you centralize drill grinding, any handy apprentice can easily sharpen drills for the entire plant.

Check these features
✓Instant Drill Point Angle Selection, 90° - 150°
✓Speedy Clearance Angle Setting, 5°, 9°, 12°, etc.
✓Feed-In Screw Precision Adjustment
✓Broken Drill Reclaimer
✓Web Thinning Wheel
✓4-Power Magnifier DDG-1A

The DUMORE Company
1300 17th STREET, RACINE, WISCONSIN
Export Address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 11268 If you write the maker



Their Brightness Blends Handsomely with Original Equipment!

PIC STEEL UNIONS

This smart-appearing 150 lb. steel union looks as if it belonged on original equipment . . . and it *does!* Not only bright and attractive — it's unusually strong. Ends are of heavy steel pipe coupling stock — uniformly flat sided for speedy installation in tight corners or elsewhere with open end wrenches. Special wedge type bronze seat for tight closure. 100% zinc plating — even on threads — gives maximum rust protection. You'll be pleasantly surprised by the cost — less than a galvanized — no more than a black malleable union.

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130 Thurbars Avenue, Providence 5, R. I.

BREVITY—Identify by IEN - 11269 If you write the maker

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Rolled Forms
Stampings
?

It costs no more to Sub-contract with a SPECIALIST

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COMPANY
ADDRESS CITY STATE

Greene of Racine
GREENE Manufacturing Company, Inc., Racine, Wis.

NEWS NOTES—Concluded

"How to check your material handling methods"

BREVITY—Identify by IEN - 11270 If you write the maker

STRAINERS . . Design suggestions in booklet on strainers made of wire cloth

Michigan Wire Cloth Co.
2102 Howard St., Detroit 16, Mich.

Wire cloth selection, mesh and wire size, metal, strainer size, shape, construction methods, fabrication practices are representative topics in new 8-page "Engineer's Manual of Wire Cloth Strainer Design". Information also is given on technical services available from the company.

BREVITY—Identify by IEN - 11271 If you write the maker

TRUCKS . . Reasons for their use summarized in booklet on material handling

Clark Equipment Co.
Battle Creek 49, Mich.

How and why to use fork lift trucks and tractors is described in condensed manner by new 24-page pocket booklet, "Basic Facts About Materials Handling". It covers elements of a unit load, use of overhead space, truck types and their uses. Information needed for a cost analysis.

BREVITY—Identify by IEN - 11272 If you write the maker

TRUCKS . . Booklet of forms and instructions on how to analyze your present material handling methods

Yale & Towne Mfg. Co.
11002 Roosevelt Blvd., Philadelphia 15, Pa

"The How Book" in revised edition is a 24-page booklet that shows how to use a set of analysis forms to check into your present methods of material handling. Filling in the forms enables you to trace handling from receipt to finished storage, to diagram route of travel, and to accumulate figures on handling operations. Sample forms are supplied. Balance of the booklet summarizes available equipment.

BREVITY—Identify by IEN - 11273 If you write the maker

WATER SUPPLY . . Its importance to us stressed by new motion picture, manual, leaflets

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Visual program to make us aware of growing water shortages and to enlist support for community water works is the latest in the company's "More Power to America" series. It consists of a 16-mm. color sound film, "Pipeline to the Clouds", a 40-page manual "Good Water—and Plenty of It", and a 4-page audience handout folder "Wonders of Water". A kit of the film, 5 manuals and 200 folders lists at cost price of $170. Previous subjects were reviewed IEN-7765-51.

BREVITY—Identify by IEN - 11274 If you write the maker

WOOD PARTS . . Examples of use for lignum-vitae to serve as application suggestions

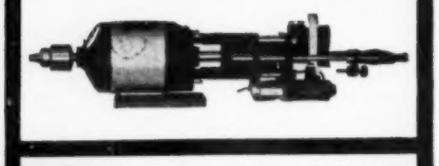
Lignum-Vitae Products Corp.
98 Boyd Ave., Jersey City 4, N. J.

Self-lubricating, acid-resisting and non-contaminating properties of lignum-vitae wood parts are stressed in new 16-page "Wartime Report". After an introductory section on properties, performance reports are given in a variety of industries, applications listed by product and by use to serve as suggestions for bearings, bushings, rollers, wheels.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11275 If you write the maker

New BLACK SELF-CONTAINED DRILLING UNITS



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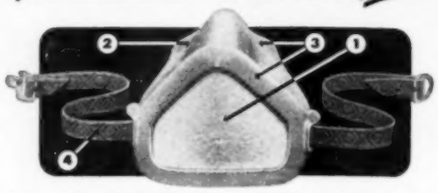
NO CAMS
NO CLUTCHES — Operate in any position. Wide range of speeds and sizes.
NO REVOLVING WEIGHTS

Write for complete information
THE BLACK DRILL COMPANY
1378 EAST 222nd STREET CLEVELAND 17, OHIO

BREVITY—Identify by IEN - 11276 If you write the maker

4 Reasons why FLEX-A-FOAM (and only FLEX-A-FOAM) provides Dust Protection your workers will welcome and Wear



1. Pure latex washable filter purifies the air of non-toxic nuisance dusts as small as 1/25000 of an inch — yet it's easier to breathe and talk through than an ordinary pocket handkerchief! Out-wears throw-away type filter as much as 100 to 1.
2. Perfectly contoured for self-adjusting fit to every size and shape of face—designed for wear with spectacles or goggles with perfect comfort.
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BALL BEARING SWIVEL FITTINGS
FOR LIQUIDS, GASES, STEAM, AND OTHER CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION SERVICE.

360° FREE ROTATION—1, 2 AND 3 PLANES
Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ⅜" to 14" low pressure; ⅜" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750°F., asbestos or Teflon packed. Low pressure fitting to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at left, threaded, flanged or weld ends.

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HOLLYDALE, CALIFORNIA
RAMSCO

BREVITY—Identify by IEN - 11278 If you write the maker

How to get 25% to 40% FASTER CUTTING with your Power Saws

The machine accuracy of the Foley Saw Filer cannot be equalled by the most expert hand filing. The Foley automatically joints the saw as it files, bringing all uneven teeth back to uniform size and perfect spacing. Instantly production goes up 25% to 40% because your saws cut faster, smoother, run cooler—and stay sharp longer, too!

FREE BOOK on Modern Saw Maintenance

This is the instruction book which goes with every Foley Saw Filer. It will show you how the Foley eliminates all inaccuracies, how simple and positive its adjustments are. If you are conditioning saws by hand, this book points the way to both increased production and reduced saw maintenance costs.

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Meeting today's precision standards requires accurate center holes in the work. Ex-Cell-O Center Lapping Machines correct inaccuracies of center holes that affect the quality of all subsequent operations performed between centers. Fully described in Bulletin 40271—yours for the asking.

51-11

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

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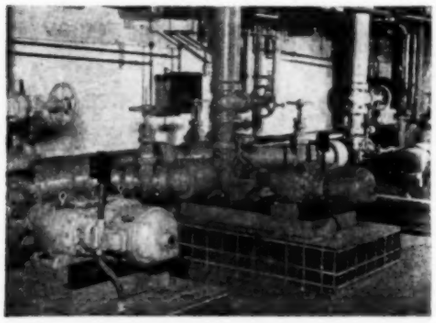

for production that needs more horsepower— MOTORS and CONTROLS via Graybar

It's sound practice to specify General Electric motors—sound practice, too, to make sure you get the *right* G-E motor . . . via Graybar.

Service under all conditions proves the rugged reliability of the entire G-E Tri-Clad line—motors that are built to take physical abuse . . . built to deliver smooth, steady power.

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Let your local Graybar Representative be your motor advisor. He can help you match up motors with machine-drive requirements . . . help you analyze service conditions requiring special types such as totally-enclosed motors, variable speed motors, gear motors, reversible motors.

G-E motor controls are also distributed by Graybar. Here again, you'll find your Representative well-qualified to recommend the type best-suited to the operating procedures in your plant.

He can also provide details on the G-E Motor Exchange Plan. Covering popular fractional and integral ratings, this plan makes emergency replacement of inoperable motors a simple over-the-counter transaction.

SPECIALIZED TECHNICAL HELP

On out-of-the-ordinary installations or where you or your electrical contractor desire specialized technical information, you can obtain the additional assistance of an experienced Graybar Power Apparatus Specialist. Call on him, too, for help in choosing transformers, switchgear, circuit breakers, capacitors, and other items for inter-plant distribution.

EXTRA GRAYBAR SERVICE ON ANYTHING ELECTRICAL

Before you buy your next motor—or for that matter, anything electrical—discover for yourself the many helpful services that stand behind the Graybar tag—services that even today can help you buy with greater speed and efficiency the materials and supplies required for wiring, communication, ventilation or lighting.

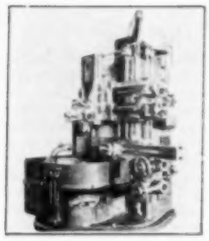
Graybar Electric Company, Inc. Executive offices: Graybar Building, New York 17, N. Y. 178-1211

Avoid electrical delays — plan ahead . . . via GraybaR IN OVER 100 PRINCIPAL CITIES

▼ BREVITY—Identify by IEN - 11282 If you write the maker ▼

BORING . . Vertical machine with 42 in. table and side tool head

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



The company announces volume production, first deliveries to be made in December, of its modernized Niles Side-Head Mill. The machine is driven by a 30-hp. motor. It provides 12 table speeds between 9 and 200 rpm. and 16 feeds for either the vertical or the side head between 0.003 and 0.520 in. per revolution. The table is equipped with a four-jaw independent chuck in standard assembly. It can be specified with a three-jaw combination chuck or plain design. There is a taper turning attachment for the side head, a thread-cutting attachment for either head, a separate attachment to supply coolant and one for profiling. Fixtures and tooling can be specified for given work.

A center stop locates the rail head and maintains alignment between it and the center line of the table spindle. Centralized controls are featured. The down feed and cross feed or power traverse for both the rail head and side head can be selected for independent or simultaneous operation.

Swing, with the side head down, is 50 inches. Maximum distance from the table top to the turret face is 48 inches. The vertical head mounts five tools, has a slide travel of 28 in. and will swivel through 45 deg. to either side of vertical. The side head takes four tools. It has vertical working travel of 35 in. and horizontal travel of 21 inches.

▼ BREVITY—Identify by IEN - 11283 If you write the maker ▼

TRUCK . . Special lift carriage, hydraulic pressure shifts the forks

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

New carriage mounts a pair of forks with a lateral hydraulic operating mechanism. The design employs the forks in standard manner to handle pallets or as a means to clamp a load from the two sides, to pick up and carry drums, cartons, boxes, or as a spacer to shift a load from one side to another for operation in close quarters. Control centers at a lever in front of the operator. The action is hydraulic through a roller chain.

The carriage is available in 36, 42 and 48 in. outside fork spread. It provides 17 in. of spacing and clamping action or 4¼ in. of lateral movement for side shifting on either side of center. A shoe attachment is available with the clamping action in which case the 36-in. assembly will handle drums and other cylindrical loads to 24¾ in. in diameter. Application is on the company's 1 to 2-ton fork-lift trucks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11284 If you write the maker ▼

Now available . . . . CARBIDE CUTTING TOOLS, the first authoritative text book on carbides, designed to inform the student, the designer and the man at the machine.

"KNOW HOW"—the best productive use of manpower, machines and materials is essential in our present emergency. It is with this in mind that V-R is making this book available.

CONTENTS: Machine Tools and the Carbides. Converting to Carbides. Tool Angles, Machinability. Tipping a Carbide Tool. Grinding Single-Point Tools. Cutting Power, Speeds, Feeds. Carbide Tool Design. Coolants and Carbide Tools. Carbide Forming Tools. Carbide Milling Cutters. Sharpening Milling Cutters. Multiple-Edge Carbide Tools. Cutting Speeds, Feeds, Forces. Multiple-Edge Tool Design. Selection of a Carbide. Tool Materials. Assembly. Grinding and Use of Tools. Index.

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WAUKEGAN, ILLINOIS

▼ BREVITY—Identify by IEN - 11285 If you write the maker ▼

Here's maximum pressure for minimum space! You save on installation space and cost with "Buffalo" Type "CB" Pressure Blowers. Thoroughly proven over the years, these popular "Buffalo" Fans have recently been improved in strength, weight, size—and efficiency. WRITE FOR BULLETIN, 3553-A for complete description. 150 c.f.m. to 5000 c.f.m. sizes to choose from.

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Branch Offices in all Principal Cities

"Buffalo" "CB" BLOWERS

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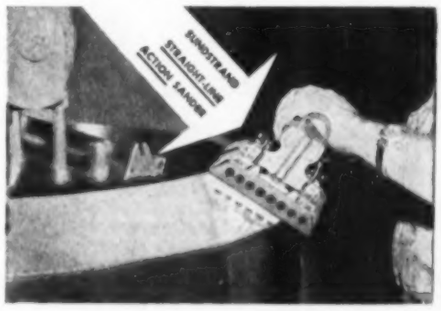

Speeds graining and blending-in of welded seams on stainless steel work

Fast, *smooth* way to carefully finish off seams in stainless steel products. Sundstrand *Straight-Line Action* removes scratches, defects . . . blends-in and grains the seam perfectly after assembly. Sundstrand Air Sanders are available in single or double pad models . . . for wet or dry sanding on flat or curved surfaces . . . to handle almost any sanding operation on wood, metal or plastics. See your local distributor or write us today for bulletin 1E-11.

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

▼ BREVITY—Identify by IEN - 11287 If you write the maker ▼

A fast, efficient 10-lb. indirect arc furnace

for small melts of bronze, iron, or steel

The type NS, 10 KW, 10 lb. Detroit Electric Furnace provides a unit which melts on short notice, melts speedily, and with excellent control of analysis and characteristics. A 6 pound heat of bronze melts in 6 minutes; an equal heat of alloy steel in 12 to 15 minutes. For research, experimental work, and small production, the NS furnace delivers high efficiency and simple, economical operation.

Write for complete information.

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL — Equipamentos Industriais "Eiso" Ltd., Sao Paulo, CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelhet Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cosen, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

BREVITY—Identify by IEN - 11288 if you write the maker

NEW APPROVED PUMP makes liquid handling SAFER

These new Tokheim Hand Pumps are a great boon to industrial safety. They stop wasteful dripping and slippery floors, reduce fire hazard and accidents, and save on drum storage space. At the same time, their fast, easy double-action speeds production, reduces costs. Ideal for many liquids. Available in hose and spout models for use with drums or underground tanks.

Approved for use with petroleum liquids — ideal for many others.

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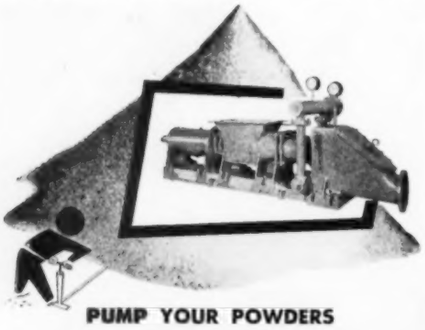
TOKHEIM DOUBLE-ACTION HAND PUMPS

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Ave., Fort Wayne 1, Ind.
Factory Branch: 1309 Howard St. San Francisco 3, California

BREVITY—Identify by IEN - 11289 if you write the maker



PUMP YOUR POWDERS with a FULLER-KINYON SYSTEM!

Powders that can be aerated flow like water—anywhere in a plant—when they're pumped by Fuller-Kinyon. Such dry, pulverized materials can be automatically distributed to any desired number of bins in sequence. No dust nuisance . . . no waste . . . safe . . . sanitary . . . low power . . . low maintenance. If you have a bulk dry material handling operation, it will pay you to ask Fuller about it. Write for further information.

P-122

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DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

BREVITY—Identify by IEN - 11290 if you write the maker

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

No. 5 AIR MODEL

FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

Hand Operated Models Available

IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPE. CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60P, MICH.

BREVITY—Identify by IEN - 11291 if you write the maker

PAINTING . . Spray gun for maintenance and for production use

Source: De VILBISS CO.
305 Phillips Ave., Dept. I, Toledo 1, Ohio

Lists at $25.50

Type TGA is a new aluminum-housing paint-spray gun weighing about 14 oz. and designed for connection to a shop air line or a small compressor and to a pressure source or a suction feed cup for paint. The gun measures 5¾ in. in overall length and can be adjusted for a spray pattern ranging from a small spot to a maximum spray width of 5 in. when the gun is 6 in. from a work surface. Air consumption is 4 to 5 cfm. at 40-lb. pressure.

BREVITY—Identify by IEN - 11292 if you write the maker

STEEL . . Flat ground die stock in 36 in. lengths and 35 stock sizes

Source: SIMONDS SAW & STEEL CO.
468-72 Main St., Dept. A, Fitchburg, Mass.

Ask for chart flat ground steel

Stock sizes of the company's flat ground die steel, previously available in maximum 18 in. length, now can be ordered in lengths measuring a little more than 36 in. to permit making several saw cuts. The steel is the company's own oil-hardening, non-deforming type. It is uniformly annealed, ready for sawing, filing, machining. It is ground to a thickness limit of plus or minus 0.001 in. and all pieces have a smooth surface finish ready for layout markings. Edges and ends are square, parallel and accurate to dimension.

Sizes in stock start ½ by 2 in. in cross section and increase in small steps to 1½ by 10 inches. Hardening instructions are included on the wrapper of each bar.

BREVITY—Identify by IEN - 11293 if you write the maker

PACKAGING . . Tying twine, Kraft paper and Fiberglas strands

Source: COLUMBIAN ROPE CO.
301 Genesee St., Auburn, N. Y.

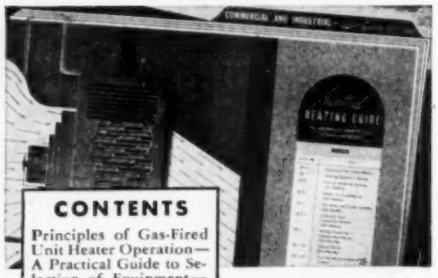
Practically no stretch

Colcord G trade names a new twine consisting of Kraft paper twisted around a care of Fiberglas strands. It is available in seven sizes from No. 12 to No. 60. It is intended for the same applications as polished cotton twine. It is characterized by uniform strength and minimum stretch. It is priced competitively with cotton twine. Each Fiberglas strand in the core is made of 204 individual glass filaments. Manufacture is in standard twine machinery.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11294 if you write the maker

VALUABLE GUIDE ON PRACTICAL USE OF UNIT HEATERS for industrial installations



CONTENTS

Principles of Gas-Fired Unit Heater Operation—A Practical Guide to Selection of Equipment—Typical Floor Plan Layouts for Commercial and Industrial Installations—Use of Automatic Controls — Specifications — Combining Heat with Air Conditioning.

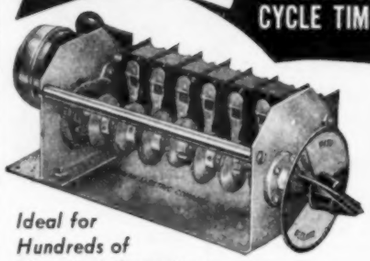
WRITE TODAY FOR FREE COPY

SURFACE COMBUSTION CORPORATION, DEPT. D, TOLEDO, OHIO

Janitrol GAS-FIRED UNIT HEATERS

BREVITY—Identify by IEN - 11295 if you write the maker

For Immediate Delivery.... The NEW ZENITH Multi-Circuit CYCLE TIMER



Ideal for Hundreds of Electrical Operations

Specially designed to accurately time any operation — for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning machinery. The Multi-Circuit Cycle Timer and other Zenith units will also solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For information on volts, cycles and circuits as well as prices—send for illustration Bulletin No. 142.

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

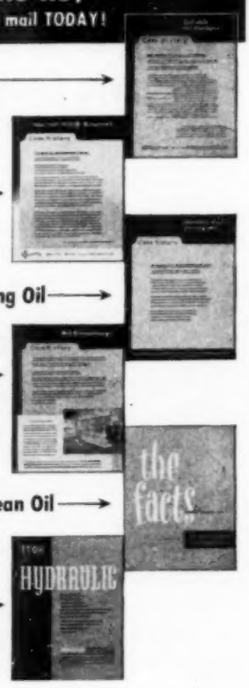
BREVITY—Identify by IEN - 11296 if you write the maker

Ford Motor Co. saves 96.5% on COOLANT FILTRATION COSTS with HONAN-CRANE Equipment

GET THE DETAILS!

These case histories and "Clean Oil Bulletins" describe how industrial plants, large and small, save thousands of dollars annually with Honan-Crane Oil Purification and Handling Equipment.

TEAR OUT THIS AD, check the boxes and mail TODAY!



Soluble Oil Coolant →
☐ Case Histories: Ford Motor Company and Milwaukee Gas Specialty Co.

Chip and Waste Removal →
☐ Case Histories: Manufacturer of Fine Automobiles and Minneapolis Electric Castings Company. (Houdaille Conveyor Systems.)

Machine Tool Cutting Oil →
☐ Case History: Wagner Electric Corp., St. Louis.

Oil Quenching →
☐ Case Histories: Cleveland Graphite Bronze Co., Ft. Wayne Works of International Harvester and Salisbury Axle Division of Dana Corporation.

The Facts About Clean Oil →
☐ 14-Page booklet describes highly profitable advantages of oil purification in wide variety of industries. Gives brief case histories.

Hydraulic Bulletin →
☐ 8-Page booklet tells how Honan-Crane Equipment reduces downtime and costly repairs on hydraulic presses, machine tools, plastic molding machines, etc.

NAME
TITLE
COMPANY
ADDRESS
CITY STATE

CLEAN OIL ENGINEERING

Honan-Crane Corp.
802 WABASH AVENUE
LEBANON, INDIANA
A Subsidiary of Houdaille-Hershey Corp.

▼ BREVITY—Identify by IEN - 11298 If you write the maker ▼

TEFLON*

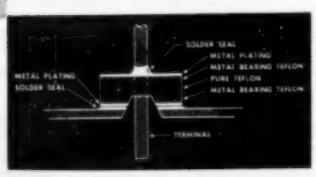
Hermetically sealed to metals
(Patents Pending)

- *For Vacuum-tight TERMINALS and FEED-THROUGH INSULATORS*
- *For Moisture-impervious PRINTED CIRCUITS*
- *For Electrical characteristics ranging from insulator to semi-conductor to low resistance conductor in the same unit.*
- *For Metal Faced Teflon sheets, bars, cylinders and certain fabricated parts for particular problems.*

The fluorocarbon metal fused seal is a true hermetic seal capable of holding a vacuum for sustained periods. It is recommended where severe service conditions are encountered—vibration, shock, high and low ambient temperatures, thermal shock, extreme climatic conditions.

Fluorocarbon Products Division
UNITED STATES GASKET COMPANY
658 N. 10th St. Camden, N. J.

*Trademark for duPont tetrafluoroethylene resin.



▼ BREVITY—Identify by IEN - 11299 If you write the maker ▼

they call me Handy Andy

Here's the handiest test pump for hydraulically testing pipe, valves and fittings; for operating hydraulically actuated equipment; for hundreds of other uses in field, laboratory or shop. ★ This two-stage, manually operated pump has one cylinder for low-pressure testing (up to 2,500 psi); is quickly shifted to develop up to 6,000 psi. ★ Replaces elaborate, expensive testing equipment. ★ Readily portable (weighs only 70 pounds) and with a bucket of water you can quickly and painlessly develop on-the-spot pressures up to 6,000 psi. ★ Costs mighty little—lasts indefinitely—pays for itself long before a few inexpensive wearing parts need to be replaced. ★ For details and price address . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX
LOS ANGELES 54, CALIFORNIA

▼ BREVITY—Identify by IEN - 11300 If you write the maker ▼

Naylor's fabrication service provides a dependable source for fittings, manifolds, piping and other equipment to meet your precision requirements. Made in carbon steel, stainless steel (Nos. 304, 316 and 347), monel, nickel, and copper alloys.

Send specifications for quotation.

NAYLOR PIPE COMPANY
1235 E. 92nd St., Chicago 19, Ill.
New York Office: 330 Madison Avenue, New York 17, N. Y.

▼ BREVITY—Identify by IEN - 11301 If you write the maker ▼

HEATING . . Electric hot plate, 660 to 2,000 watts, to 800 deg. F.

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.

For your laboratory

Chromatrol trade names a new switch that is standard equipment on the illustrated electric hot plate. It provides stepless variation of the first 50 per cent of total heat available between off and full-on positions. The balance of the range is in steps.

The plate can be operated at maximum temperature steadily, 800 deg. F. for the unit rated at 2000 watt. Connection is to a 110 or 220-volt ac. power source. Enclosed resistor, baffle plates and molded plastic feet are standard.

▼ BREVITY—Identify by IEN - 11302 If you write the maker ▼

SOLDERING . . Non-corrosive flux designed for specific soft soldering uses

Source: SUPERIOR FLUX & MFG. CO.
1300 Ontario St., Dept. F, Cleveland 13, Ohio

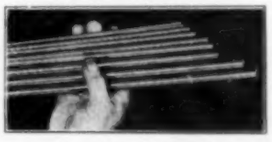
Single pint list at $1.20

No 30 is a new liquid flux, mildly acid in initial character. This acidity is neutralized by heat in the soldering operation to leave a residue that is normally non-corrosive, non-hygroscopic, non-electrically conductive and non-fuming. The flux is not recommended as a general substitute for the commonly used zinc-chloride fluxes. It is particularly suited for soft solder applications where rosin-base fluxes are not satisfactory and where zinc-chloride or similarly strong acid fluxes cannot be used. The residue is water soluble. Packaging is in quarts and gallons and in 30 and 55-gal. drums.

▼ BREVITY—Identify by IEN - 11303 If you write the maker ▼

STEEL . . High speed drill rod, 36 in. length, 3/32 to 1 in. diameter

Source: ACE DRILL CO.
2602 Maumee Road, Adrian, Mich.



Strong, tough, accurate

Ten foot lengths of round bar stock made of high-speed steel are fed through continuous heat-treating equipment in manufacture of this new drill rod. Blanks are cut from this treated stock and are centerless ground. Finished blanks are available in hardened, tempered and centerless-ground units in diameters from $\frac{1}{16}$ to 1 in. with tolerance of plus or minus 0.001 inch. They also are available in hardened and tempered only in sizes from 0.118 to 0.515 inch. Representative applications are in manufacture of dowels, gages, knock-out pins, punches, rollers, tool bits.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11304 If you write the maker ▼

Know the scope of the MARSH line of pressure gauges

There are literally thousands of combinations of types, ranges, case styles and connections in the broad Marsh line of pressure, vacuum and compound gauges. As a result, gauge requirements that would be "special" to others are often standard to Marsh.

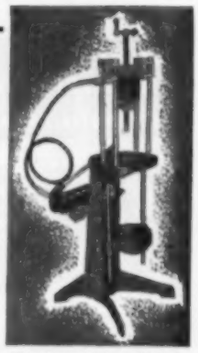
This means that we can meet your gauge needs better and more economically . . . whatever the service condition, quantity or design requirement. To know the scope of Marsh Instruments just ask for the new fact-filled catalog.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept.: 155 E. 44th St., New York 17, N. Y.

▼ BREVITY—Identify by IEN - 11305 If you write the maker ▼

new OTC POWER-TWIN

PORTABLE PEDESTAL PRESS



An amazingly efficient portable pedestal press, which combines with the Power-Twin Hydraulic Ram to perform tough jobs easily and quickly.

STRONG. Handles 99% of all pulling or installing jobs. Especially designed for use with OTC 17½ ton Hydraulic Puller.

AMAZINGLY PRACTICAL for all production, assembly line and maintenance operations.

PORTABLE OR PERMANENT. Easily moved from job to job or located near permanent equipment.

COMPACT. Base is only 20 x 21 inches.

VERSATILE. Provides almost unlimited vertical adjustment for pulling or installing wheels, pulleys, bushings, collars, couplings, gears, shafts and bearings.

POWER-TWIN HYDRAULIC BENCH PRESS

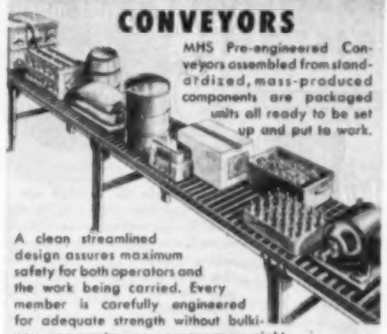
Bench frame available for use with OTC Power-Twin Center-Hole Hydraulic Ram. Provides compact, inexpensive hydraulic press for mounting on bench for use in shop—or service truck for use on the job.

See your jobber for complete information or write us.

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

▼ BREVITY—Identify by IEN - 11306 If you write the maker ▼

+ Plus Values OF MHS PRE-ENGINEERED CONVEYORS



MHS Pre-engineered Conveyors assembled from standardized, mass-produced components are packaged units all ready to be set up and put to work.

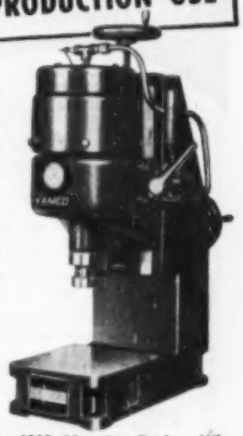
A clean streamlined design assures maximum safety for both operators and the work being carried. Every member is carefully engineered for adequate strength without bulkiness—no waste—no unnecessary weight.

Write for Bulletin PE-1 or for a quotation based on your specific requirements.

Mechanical Handling *Systems, Inc.*
4603 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

▼ BREVITY—Identify by IEN - 11307 If you write the maker ▼

Now! AN AIR PRESS BUILT FOR PRODUCTION USE



Here's another Famco Cost-Cutting Machine—a compact, rugged Air Press built for high-speed production operation. Famco Air Presses are available in 20 models, ½ to 5½ Ton capacity with electric or air controls—the product of Famco and Bendix-Westinghouse engineering. Features include:

- Semi-steel cast frame and cylinder mount; use of alloy-steel, copper tubing and steel fittings throughout.
- Pristaglass (leak-proof), long-or-lived cylinder requires no lubrication.
- Infinitely variable vertical adjustment of cylinder.
- Extra-long strokes infinitely variable from 0 to maximum.
- Accurate, built-in pressure gauge.
- Ram keyed to prevent rotating.

For further details, write for new Famco Air Press Catalog.

FAMCO MACHINE CO., 1303 18th St., Racine, Wis.

famco (COST CUTTING) **machines**

ARBOR PRESSES • DRILL PRESSES • BAND SAWS • AIR PRESSES
POWER PRESSES • FOOT PRESSES • SQUARING SHEARS

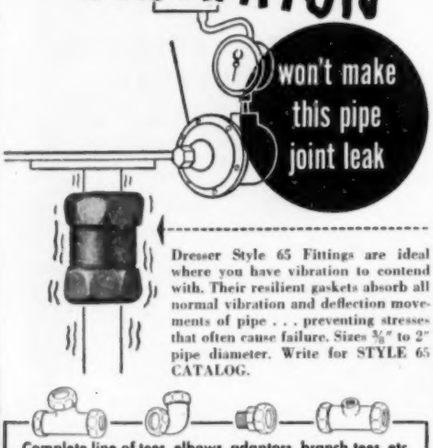
BREVITY—Identify by IEN - 11308 If you write the maker

20 and 25 year records of daily service are not uncommon for Lanco Industrial Trailers built under Lansing Company's policy of good design, select materials and skilled craftsmanship. Popular Lanco Model 795 illustrated is one of the many models available with a wide choice of wheel styles and racks. Write today for information on units that will exactly fit your trailer requirements.

LANSING CO. LANCO MATERIAL HANDLING EQUIPMENT — LANSING, MICHIGAN

BREVITY—Identify by IEN - 11309 If you write the maker

VIBRATION



Dresser Style 65 Fittings are ideal where you have vibration to contend with. Their resilient gaskets absorb all normal vibration and deflection movements of pipe . . . preventing stresses that often cause failure. Sizes ⅜" to 2" pipe diameter. Write for STYLE 65 CATALOG.

Complete line of tees, elbows, adaptors, branch tees, etc.

DRESSER "NO-THREAD" FITTINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco.

BREVITY—Identify by IEN - 11310 If you write the maker

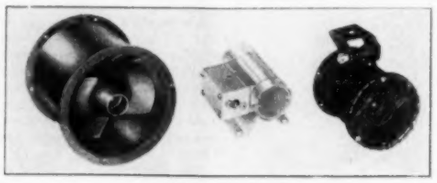
- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

INDUSTRIAL ENGINEERING & MFG. CO., INC. BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 11311 If you write the maker

VENTILATING . . Motor driven fan circulates air in an equipment housing

Source: STANAT MFG. CO.
47-30 37th St., Long Island City 1, N. Y.



For built-in application

The company has developed a new line of duct-enclosed motor-driven fans in 2, 4 and 6-in. diameters for assembly in equipment housings such as those employed for induction heating, radar, radio. The motor can be specified for single-phase or three-phase 60-cycle ac., 400-cycle ac., 27½-volt dc. Speeds range from 3,300 to 10,000 rpm. Construction is in aluminum. The driving motor in each case is located in the air stream and thus is cooled by the moving air.

BREVITY—Identify by IEN - 11312 If you write the maker

CLEANING . . Hand cream, loosens dirt, grime, paint from hands

Source: BOYER-CAMPBELL CO.
6538-42 St. Antoine St., Detroit 2, Mich.

No need for water

New hand cream has been added to the company's Skin-Cote line, previously described IEN-0069-51. The new material contains a solvent, oils and lanolin. It liquefies upon being rubbed on the skin. It loosens dirt, grime, rubber cement, asphalt, paint, for removal by a cloth or a paper towel.

BREVITY—Identify by IEN - 11313 If you write the maker

TRANSFORMER . . Dry type design single phase, 60 cycle, 3 kva. and up

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Illustrated to the right is new design in the company's line of general-purpose dry-type single-phase transformers. Class-B insulation is employed to permit operation on 80 deg. C. temperature rise over 40 deg. C. ambient temperature. Operation at the higher temperature permits a saving in both copper and steel in the construction for an average weight reduction of about 30 percent throughout the line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11314 If you write the maker

ROTO FINISH

GIVES YOU 5 OUTSTANDING ADVANTAGES for Deburring, Descaling and Finishing Operations

1. Eliminates tedious hand filing, scraping, polishing, deburring, etc. to save many man hours.
2. Provides absolute uniformity in quantity lots.
3. Maintains exacting tolerances on precision parts where no dimensional change is allowable.
4. Imparts a finish mechanically that was formerly considered possible only by hand methods.
5. Low initial cost — requires minimum maintenance. No exhaust systems required.

Send samples for free demonstration

Roto-Finish COMPANY
associated with The Sturgis Products Co.
3701 MILHAM RD., KALAMAZOO, MICHIGAN
ORIGINATORS OF THE ROTO-FINISH PROCESSES

BREVITY—Identify by IEN - 11315 If you write the maker

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability.

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 317

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Exec. Offices: Times Bldg., Times Sq., New York N. Y.
SUPERIOR STEAM GENERATORS

BREVITY—Identify by IEN - 11316 If you write the maker

INK MARK

METALS, PLASTICS AND OTHER MATERIALS WITH—

ACRO A. O. & A. X. INKS

PRINT METALS

PLASTICS AND OTHER MATERIALS WITH—
ACROMARK PRINTING MACHINES

STAMP

STEEL TOOLS, PARTS AND PRODUCTS WITH OTHER ACROMARK MARKING AND NUMBERING MACHINES

WRITE TODAY FOR MARKING INFORMATION. NO CHARGE FOR OUR ENGINEERS' RECOMMENDATION.

The ACROMARK Company
7 MORRELL STREET, ELIZABETH 4, N. J.

BREVITY—Identify by IEN - 11317 If you write the maker

▼ BREVITY—Identify by IEN - 11318 If you write the maker ◄◄▼

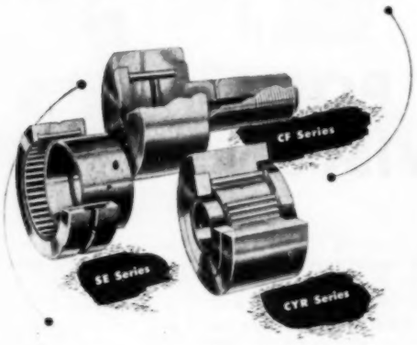
Here's News of Importance to All Quality Users of Springs

IF you are a user of large quantities of precision springs of any type we have a proposition that may very well result in a substantial reduction in costs for you. All we ask is the opportunity to have our engineers go over your spring requirements. Our experience indicates that the application of our "know-how" and modern facilities can often result in lower costs through improved manufacturing methods. Let us show you what we can do for you. Write today.

ACCURATE SPRING MFG. CO.
3807 W. LAKE ST. CHICAGO 24, ILL.
Cost Conscious Quality Since 1930

Springs — Accurate Spring — Wire Forms • Stampings

▼ BREVITY—Identify by IEN - 11319 If you write the maker ◄◄▼



MULTIROL precision is PERMANENT

The fine precision originally built into every McGill Multirol Bearing actually lasts longer. It can easily be considered permanent by comparison because Multirol Bearings are free from early internal wear that can destroy the accuracy of friction type bearings.

The rolling action of small diameter rollers maintaining a constantly lubricated roller line contact with raceways makes the difference — keeps the Multirol Bearing equipped machinery operating at top efficiency without costly maintenance for frequent adjustments and bearing replacement.

For the increased production demands just ahead you will need the performance extras of McGill Multirol Bearings. Adopt the SE Series for precision handling of increased loads when radial space is limited. Either the CF Series with stud or the CYR Series for shaft mounting will withstand heavy shock load in any kind of cam action application.

Write today for descriptive Multirol® Bearing Bulletins.

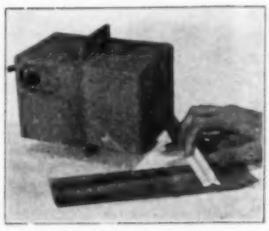
McGILL® precision bearings

McGILL MANUFACTURING CO., INC., BEARING DIVISION
100 N. LAFAYETTE ST., VALPARAISO, INDIANA, U. S. A.

▼ BREVITY—Identify by IEN - 11321 If you write the maker ◄◄▼

TESTING . . Recording oscillograph makes nine traces on a record film

Source: CONSOLIDATED ENGINEERING CORP.
302 N. Sierra Madre Villa, Pasadena 8, Calif.



Housing encloses working parts

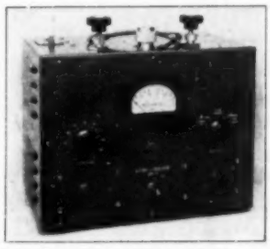
Nine sources of data representing strain, pressure, velocity, vibration, or other static or dynamic conditions, can be recorded simultaneously on a 3½-in. film that measures to 40 ft. in length in this new Type 5-118 oscillograph. Galvanometers employed in making the traces are mounted in a cast magnet block. They are accessible for adjustment or replacement when the film magazine is removed. A translucent cover on the galvanometer opening hinges back to become a graduated screen for vertical and horizontal adjustment of the light-spot traces. Tools for galvanometer adjustment are stored in the magazine which separates from the oscillograph and can be handled without danger of film fogging.

The magazine contains the mechanism which drives the film and the optical equipment at a required measured rate. Power is fed to the drive motor through a built-in connector that completes its circuit when the magazine is attached. Operation is on a 28-volt dc. power source. Overall dimensions of the new instrument are 8 by 5 by 5 inches.

▼ BREVITY—Identify by IEN - 11322 If you write the maker ◄◄▼

TESTING . . Electronic detector for minute leaks in sealed enclosures

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.



Mounts on bench or stand

Type EMV-7 designates new design of the company's electronic leak detector, previously described IEN-8112-47. The unit weighs 31 pounds. It is employed with a vacuum pump and source for hydrogen gas to detect and locate tiny leaks during the manufacture of electron tubes, vacuum bottles, research vacuum equipment.

The product to be tested is connected into the detector after it has been sealed off. The vacuum pump is started to evacuate the interior. Then a hood is placed over the work piece and hydrogen gas is filled into it, or a nozzle connecting to a source for hydrogen is passed over a suspected area.

Hydrogen will be sucked in through any leakage point to cause increase in grid current in a gage tube that is included in the detector circuit. This current is amplified and registered as an upward deflection on a microammeter on the detector housing. The equipment is assembled in a housing 15 by 11 by 13¾ inches. Operation is on 110-volt 60-cycle ac.

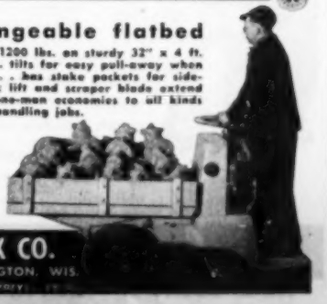
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 11323 If you write the maker ◄◄▼

LABOR-SAVING Moto-Bug (POWER WHEELBARROW)

- Hauls 10 cu. ft. of scrap, castings or bulk materials in big capacity hopper . . . makes man-hours 3 to 4 times more productive.
- Full power forward and reverse requires "no push, no pull" to travel, back up or to spot heavy loads.
- Driver rides on rear step (optional) . . . large steering wheel provides effortless maneuvering.
- Handy 33" width clears narrow doorways and aisles.
- Standard-make, 4 h.p. engine easily takes full load up 20% ramps and grades.

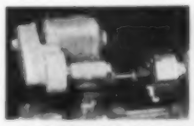
Interchangeable flatbed moves over 1200 lbs. on sturdy 32" x 4 ft. platform . . . tilts for easy pull-away when unloading . . . has stake pockets for sideboards. Fork lift and scraper blade extend Moto-Bug's one-man economies to all kinds of material-handling jobs.



Get more facts from your Kwik-Mix distributor now . . . or send for Moto-Bug bulletin TODAY.

KWIK-MIX CO.
PORT WASHINGTON, WIS.
(Kwikmix Subsidiary)

▼ BREVITY—Identify by IEN - 11324 If you write the maker ◄◄▼

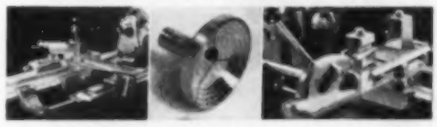


Internal Grinder

SOUTH BEND Lathe Attachments

- *Increase Lathe Versatility*
- *Simplify Difficult Jobs*

Turret Tool Block — Handlever Bed Turret — Milling Attachment

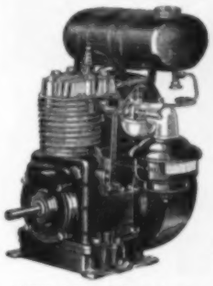


Taper Attachment — Step Chuck — Handlever Cross Slide

10-to-1 Tool Holder — Handlever Collet — External Grinder

WRITE FOR CATALOG 5102 **SOUTH BEND LATHE**
Building Better Tools Since 1906 • SOUTH BEND, INDIANA

▼ BREVITY—Identify by IEN - 11325 If you write the maker ◄◄▼



MODEL K-12-2, 3 H. P., 4-cycle, single cylinder, air-cooled. Length 14", width 14", height 19". Wt. 43 lbs.

RELIABLE POWER FOR:
CONCRETE MIXERS
ROAD OILERS • COMPRESSORS
FLOOR SWEEPERS
GENERATORS • HOISTS
CENTRIFUGAL PUMPS
LIFT TRUCKS • PORTABLE SAWS
SNOW REMOVAL EQUIPMENT
SPRAYERS • VIBRATORS

KOHLER ENGINES

Four-Cycle Air-Cooled

Kohler Engines are engineered and built to give the economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements.

Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

▼ BREVITY—Identify by IEN - 11326 If you write the maker ◄◄▼

SYNTHANE— The Light-Weight Material

MAY GIVE YOU NEW IDEAS

Synthane plastic laminates are about half the weight of aluminum . . . and that is only one of many advantages they may have for you. Synthane is strong, hard, dense, resistant to corrosion, abrasion, impact fatigue and wear. It is easily machined on standard production equipment and has excellent electrical properties such as high dielectric strength and low dielectric constant. If you have a materials problem the answer may be Synthane. For more information clip and mail the handy coupon today.

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS
SYNTHANE
MOLDED-LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.
Name _____
Firm _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 11327 If you write the maker

"Grip-Master," the original screwless drill-press vise is available in four sizes: 3", 4", 6", 8" jaw widths.

● The instantaneous and effortless setting, and guaranteed positive locking of the amazing "Grip-Master" *Screwless* Vise add up to new *savings* on hundreds of drill-press and production line operations. "Grip-Master" also makes an ideal base-structure for jigs and fixtures. Hammer blows will not budge its tenacious grip obtained by an effortless press on the locking-lever. Built-in parallels level work instantly. Write today for full information and prices on the "Grip-Master" line, or ask your Dealer for a demonstration.

NATIONAL MACHINE TOOL COMPANY
DEPT. 171-L RACINE, WISCONSIN

BREVITY—Identify by IEN - 11328 If you write the maker

Now available for efficient, cost-saving packing of shells, cartridges, fuses and other military material, are American pre-assembled interlocking partitions made to meet government specifications.

Wire for prices on your requirements.
Volume production facilities.

American PARTITION CORPORATION
3043 N. 30TH ST. UPTOWN 3-5100 MILWAUKEE 10, WIS.
Eastern Plant and Sales Office: Bound Brook, New Jersey
Bound Brook 9-3100
Western Representative: Seaman Haynes Co. — Eshbrook 3-3244, Merchants Exchange Building, San Francisco 4, Calif.
Midwest Sales Representative
16715 Milwaukee Ave., Chicago 22, Ill. — Monroe 6-1962

BREVITY—Identify by IEN - 11329 If you write the maker

S.S.WHITE *Elastoplastic*
PLUGS and CAPS

Slipped into or over the ends of plain tubing, these plugs and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite plastic, they are resistant to most oils, offer high electrical insulation, and are easily applied and stay put. For details

WRITE FOR BULLETIN P-5107

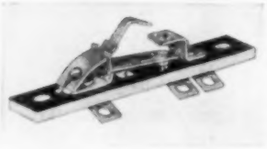
THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach Calif.

BREVITY—Identify by IEN - 11330 If you write the maker

SWITCH . . Sensitive snap acting, builds in, 6 amps. on 110 volt ac.

Source: CHERRY-CHANNER CORP.
1486 Skokie Blvd., Highland Park, Ill.



Down to essentials

Model 2000 is new design in the company's line of sensitive switches in which an over-center coil spring takes over upon depressing the operating lever or finger. The mechanism is mounted on a Bakelite panel measuring 2⅛ in. in length by ½ in. in width. The switch is intended for use in appliances and equipment into which it is built as a component part.

Operating force is 7.5 oz. with release force at 5.5 ounces. Contacts are made of silver. The blade material is bronze. The spring is made of piano wire and is cadmium plated.

BREVITY—Identify by IEN - 11331 If you write the maker

FLOORS . . Patching material to fill holes in roadways and yards

Source: KOPPERS CO.
2047 Koppers Bldg., Pittsburgh 19, Pa.

Available in limited quantities

Komac is a new road-repair material made by mixing a special bituminous binder with aggregate to form a premix that can be pressed into chuck holes in streets and roads. The material can be applied in any kind of weather and can be stock piled in readily usable form throughout the winter. It is laid down without heating and will take traffic immediately after having been rolled into place.

Mixing is in standard equipment for this type of material. It will not adhere to hauling or spreading equipment. It will not bleed or push out of position in hot weather. Its resistance to skidding is excellent.

BREVITY—Identify by IEN - 11332 If you write the maker

ISOLATING . . Rubber mat cushions landing shock under a load

Source: GOODYEAR TIRE & RUBBER CO.
1142-46 E. Market St., Akron 16, Ohio

Let the load drop

Airfoam cushions measuring 2 in. in thickness is assembled between two ¼-in. rubber sheets in this new landing mat. The Airfoam absorbs shock and the covering ties the mat together to provide a unit measuring, as required, to 42 by 42 inches. A typical application is in connection with unloading large rolls of newsprint paper to prevent damage to the roll. The mat can serve equally well under drums, barrels, crates, packing cases to cushion shock under a load.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11333 If you write the maker

Model 218

Clean plants get those important defense jobs. Get your plant cleaned up now. A week or month from now may be too late.

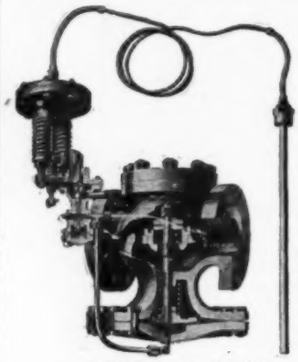
Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Mich.

BREVITY—Identify by IEN - 11334 If you write the maker

LOW COST

Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm— under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today. SE-106

SPENCE ENGINEERING COMPANY, INC. Spence
WALDEN, NEW YORK

BREVITY—Identify by IEN - 11335 If you write the maker

How Much is YOUR PLANT losing because of POOR VISION?

A sampling test, of a few of your own employees, will show how a Visual Testing program will give you the results that thousands of plants are reporting:

LOWER production costs and training costs; lower labor turnover; less spoilage; reduced accidents and insurance rates.

INCREASED efficiency, larger profits; increased employee satisfaction.

Write for *sample test* of a few of your below-average employees—or for *"What You Can Expect from a Good Vision Program,"* by a prominent industrial personnel director.

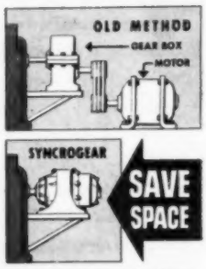
KEYSTONE VIEW COMPANY, Meadville, Penna. Established 1892. Originators of Binocular Vision Testing in Industry.

KEYSTONE *Occupational Visual Service*

BREVITY—Identify by IEN - 11336 If you write the maker

SAVE SPACE

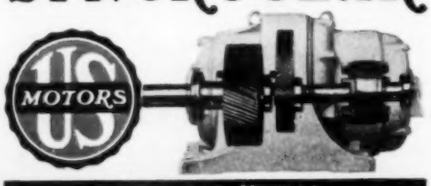
Instead of using an external gear box or old fashioned open belts and chains, now you can install a U. S. Syncrogear Motor with built-in gears. You save space. Gears are fully enclosed and hardened for long-life service. Pyramidal structure insures permanent alignment.



10 to 10,000 RPM
¼ to 30 h.p.

Write for Bulletin

SYNCROGEAR



U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Cal. Milford, Conn.

▼ BREVITY—Identify by IEN - 11337 If you write the maker ▼

Free Folder tells you

WHICH FLUID STRAINER

- handles full flow [1]
- of many industrial fluids [2]
- removing 100% of solids [3]
- without stops for cleaning [4]
- and lasts indefinitely [5]

Cuno Auto-Klean — in same space as usual partial-flow type — (1) handles *full flow* of (2) lubricating, hydraulic and fuel oils, water and process fluids. It (3) is *guaranteed* to remove all solids larger than specified. It is (4) *continuously cleanable* without stopping flow, and (5) is all metal, non-collapsible, and corrosion resistant.

For free booklet on fluid straining, address Cuno Engineering Corp., Dept. 697A, South Vine Street, Meriden, Connecticut.

*Models available for straining from .0035 to .062 in.

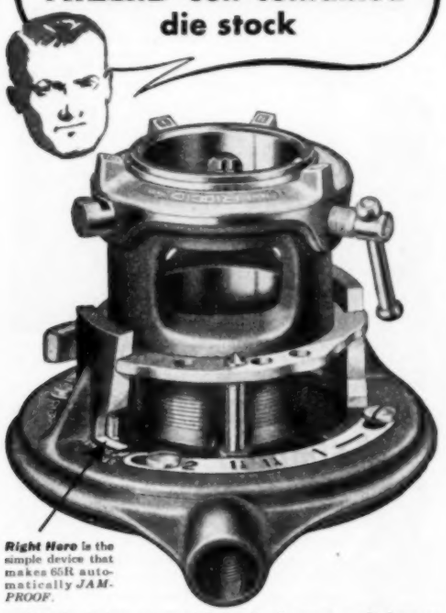
CUNO *Fluid Conditioning*

Removes More Sizes of Solids from More Types of Fluids

▼ BREVITY—Identify by IEN - 11338 If you write the maker ▼

You can't jam the new RIDGID 65R

Really streamlined pipe threading with this RIDGID self-contained die stock



Right Here is the simple device that makes 65R automatically *JAM-PROOF*.

● You don't have to watch it—lead screw can't jam on workholder. New jam-proof drive plate automatically kicks out driving ratchet pawl when standard length thread is cut. Your recent model 65R easily converted—just buy new drive plate, put in place of old plate. Perfect threads on 1" to 2" pipe with one set of 4 high-speed steel dies—sets to pipe size in 10 seconds, mistake-proof self-centering workholder sets instantly! Buy the new jam-proof RIDGID 65R at your Supply House.

RIDGID

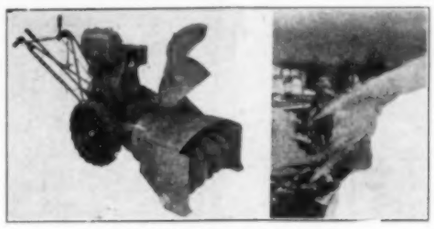
Work-Saver Pipe Tools

THE RIDGE TOOL CO. • ELYRIA, OHIO

▼ BREVITY—Identify by IEN - 11340 If you write the maker ▼

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: MAXIM SILENCER CO.
83-87 Homestead Ave., Hartford 1, Conn.



You can throw away your shovels

New design is announced by the company for its Model-628 7½-hp. snow plow and for its Model-319 assembly, which employs a 4½-hp. engine. The new design assures continuous operation under all types of snow conditions and minimizes any requirements for maintenance.

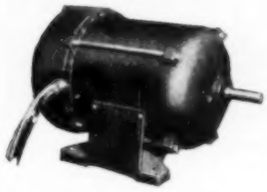
The operator walks back of the machine where he steers and controls its forward movement with a clutch lever located between the handles. The machine eats into the snow, piles it or whirls it away to a considerable distance on one side. Maximum speed is 230 fpm. for the larger machine, 120 fpm. for the smaller one. Width of the path the machine will cut is 28 and 19 in. without wings in place. When the wings have been added the width is increased to 35 and 25 inches.

Bulletin, "Maxim Snow Throwers", 4 pages, describes two available models, illustrates them with major specifications.

▼ BREVITY—Identify by IEN - 11341 If you write the maker ▼

MOTOR . . Single phase capacitor unit totally enclosed fan cooled, 1 to 5 hp.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Capacitor and switch for starting duty are mounted within the frame of this new single-phase motor, in the company's Tri-Clad line, for protection and to minimize space requirements. The motor is available in ratings from 1 to 5 hp. and is intended for use in locations where the surrounding atmosphere is filled with dirt, grit or moisture. In addition to the totally-enclosed construction it is available in explosion-proof and dust-proof assembly for installation in hazardous locations. Typical uses are to drive coal stokers, exhaust fans, grain elevators, fuel pumps.

Construction employs cast iron in the end housings and the main frame. Cast aluminum is used in the squirrel-cage rotor. The rotor is mounted on ball bearings sealed to operate for a period of years without attention. Accessible grease fittings are provided for lubrication when it does become necessary. The 5-hp. size is available for operation on 220-volt 60-cycle ac. The other sizes operate on 110/220 volts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11342 If you write the maker ▼

SEE FOR YOURSELF—Next time try a FORT WORTH TRANSCO QD SHEAVE

FORT WORTH WAREHOUSES MEAN BETTER V-DRIVE SERVICE

You will receive the best in service, sheaves, and V-belts when you buy a Fort Worth-Transco V-drive.

Two manufacturing plants and a large foundry, designed to make sheaves, assure volume production even in periods of short supply. Factory warehouses in most large industrial centers supplemented by numerous stocking distributors provide quick delivery of stock sizes.

We will be pleased to advise you the name of your nearest stocking distributor.

"QD" HUB ALSO FITS NEW FORT WORTH "QD" Roller Chain Sprocket

Speed-changes are simplified and "worn" sheaves and sprockets can be turned more easily.

If your favorite distributor doesn't stock the Fort Worth QD line — both sheaves and sprockets, tell him about them. He'll reward you with better service.

Write for descriptive catalogs on "QD" Sprockets and Sheaves. Address Dept. 26, and they will be sent to you immediately.

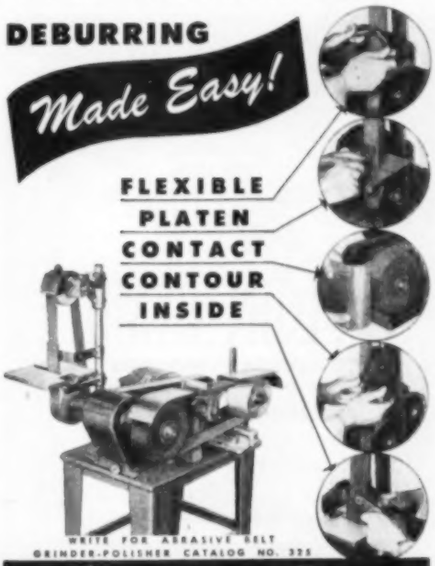
FORT WORTH STEEL AND MACHINERY CO

Dept. 211, 3600 McCart St., FORT WORTH, TEXAS

FORT WORTH PRODUCTS: ROLLER CHAIN SPROCKETS, SCREW CONVEYORS and ACCESSORIES, SCREW ELEVATORS, INDUSTRIAL FANS

▼ BREVITY—Identify by IEN - 11343 If you write the maker ▼

DEBURRING Made Easy!



FLEXIBLE
PLATEN
CONTACT
CONTOUR
INSIDE

WRITE FOR ABRASIVE BELT GRINDER-POLISHER CATALOG NO. 325

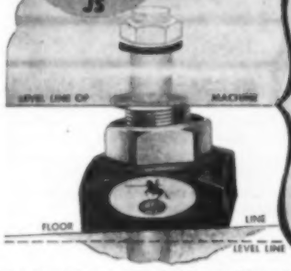
Hammond Machinery Builders

1609 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

▼ BREVITY—Identify by IEN - 11344 If you write the maker ▼

NEW MACHINE LEVELING DEVICE

Empco JACK STYLE JS



Locates on anchor bolt.

Self-aligns to uneven floor.

Easily lifts 8,000 lbs.

Simply turn adjusting nut to raise or lower machine.

VI-SORB mounting pads absorb vibration.

Where anchor bolts are used, this new Empco Jack Style JS will save considerable time in setting and keeping equipment level.

Tested to support 20 tons and lift 8,000 lbs., this Empco Jack is the answer to any machine installations. Anchor bolt hole through the jack assembly allows clearance for ¾" diameter bolt. This permits the Empco Style JS Jack to be used at the *precise spot* where equipment was designed to be best supported.

Available in three sizes: 1¾", 2", and 3" (minimum heights) with VI-SORB mounting pads as optional equipment.

Write for specifications and prices of the complete line of Empco Leveling Jacks today.

EMPCO "ROBUST"

THE ENTERPRISE MACHINE PARTS CORPORATION

2737 JEROME AVENUE • DETROIT 12 MICHIGAN

▼ BREVITY—Identify by IEN - 11345 If you write the maker ▼

NEW and MOST POWERFUL

ROTARY ELECTRIC IMPACTOOL

SIZE 34-U for 1¼" bolts

Weight—32½ lbs.
Height—10⅝"
1" square driver
110-volt AC-DC

— *makes the toughest jobs easy.*
— *sold by leading automotive jobbers and distributors.*

Ingersoll-Rand

11 Broadway, New York 4, N. Y.

623-18

▼ BREVITY—Identify by IEN - 11346 If you write the maker ◄▼

SAVE FINISHING TIME

LAPPING STICKS AND WHEELS

HAND FINISHING STONES

ON MOLDS AND DIES

Specify

ELGIN DYMO

DIAMOND COMPOUND

. . . repeat results certain with Elgin graded diamond!

AND FINISHING ACCESSORIES

. . . available from stock!

WRITE FOR FREE DEMONSTRATION!

FELT BOBS AND WHEELS

BRISTLE BRUSHES

ABRASIVES DIVISION

ELGIN NATIONAL WATCH COMPANY

Elgin, Illinois

▼ BREVITY—Identify by IEN - 11347 If you write the maker ◄▼

This is it!

This cross-section tells it's own story of how to save money on production drilling

*PATENTED

Meyco Carbide Inserted Drill Jig Bushings

MEYCO bushings combine the best features of steel and carbide . . . the protection of steel with the long life of carbide at the points of wear. First cost: higher; end result: substantial savings in production costs. Made to ASA standards . . . MEYCO bushings will SAVE you money. Don't miss *this* bet! Many sizes now available from stock.

User Says:

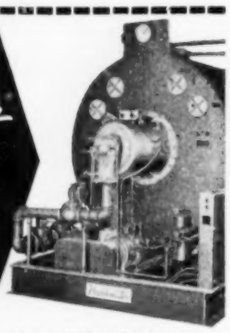
"We have a jig setup where four holes are held to a limit of plus or minus .0005" on the spacing. MEYCO bushings were put into service . . . and, after completing 150,000 parts, the bushings show no appreciable wear."

Write for bushing catalog No. 18, for further details and a price list.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

▼ BREVITY—Identify by IEN - 11348 If you write the maker ◄▼

ONLY THE Powermaster GIVES YOU ALL 3 ADVANTAGES



1. Wide range between high and low fire—you use less fuel. 2. Freedom from carbon cuts clean-up time and expense—usually by 50%. 3. Change from oil to gas (or gas to oil) in a few minutes.

To Cut Your Steam Costs Mail Coupon Today

ORR & SEMBOWER, INC. • 860 Morguntown Road • Reading, Pa.

Please send my free copy of the POWERMASTER catalog.

NAME _____ TITLE _____

(Please Print)

COMPANY _____

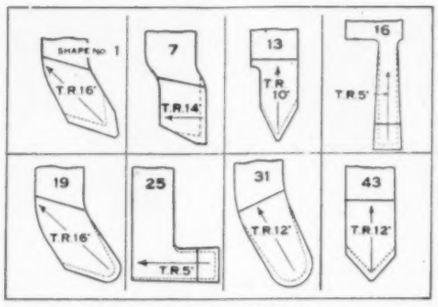
ADDRESS _____

CITY _____ ZONE _____ STATE _____

▼ BREVITY—Identify by IEN - 11349 If you write the maker ◄▼

LATHE TOOLS . . High speed steel welded to medium carbon steel shank

Source: A. MILNE & CO.
743-47 Washington St., New York 14, N. Y.



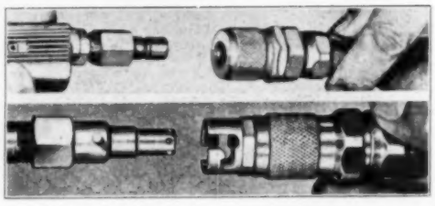
Types for each machining job

Superweld trade names a new line of high-speed lathe tools with heads of equal section to the shanks to which they are joined by butt welding. The heads are made of Stag Major high-speed steel and are heat treated. No forging or hardening is required prior to use. Section size ranges from ½-in. square to 2 by 1½ in. with length from 4 to 16 inches.

▼ BREVITY—Identify by IEN - 11350 If you write the maker ◄▼

HOSE FITTING . . Quick acting couplers include shut-off for liquid or air

Source: De VILBISS CO.
305 Phillips Ave., Dept. I, Toledo 1, Ohio



Originally for paint guns

Quick connect and disconnect combined with shut-off of the hose are provided in the action of two new couplers. Both were developed initially for use on the company's paint-spray equipment for liquid and air lines. Both are now available for this service and for other hose applications handling liquids and compressed air.

The liquid unit, Type HC-4575, is designed for a ⅜-in. hose. It employs a ball valve and a bayonet locking design. The air-line connector is being made in five sizes for ¼ to 3-in. hose. This unit employs a ball-type latch and is swivel design to permit free rotation of the stem without tangling the hose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?

Hundreds of products are listed in the index, page 117

▼ BREVITY—Identify by IEN - 11351 If you write the maker ◄▼

Beaver·Bilt

SCREWS

STUDS · RIVETS

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS

Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

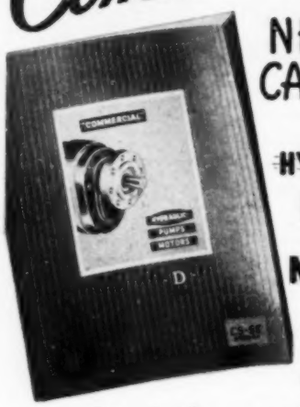
Beaver Industries

METAL FASTENER DIVISION

1500 WEST ADAMS STREET, CHICAGO 7, ILL

▼ BREVITY—Identify by IEN - 11352 If you write the maker ◄▼

Commercial's



NEW CATALOG on OIL HYDRAULIC PUMPS and MOTORS

Now

Ready for you on Request.

THE COMMERCIAL SHEARING AND STAMPING CO.

P. O. BOX 719 YOUNGSTOWN 1, OHIO

▼ BREVITY—Identify by IEN - 11353 If you write the maker ◄▼

Simple as A B C

Automatic Top and Bottom Case Sealer made by A-B-C Packaging Machine Corp., Quincy, Ill. Main drive Diamond No. 434, No. 66 on sealing operation and 1½"P extended pitch chain for conveying the cartons through gluer section.

Diamond No. 434 roller chain for main drive and No. 66 with cross flight attachments for conveying on A-B-C Case Unloader and Unscrambler.

DIAMOND Roller Chains

Simplify Operations

● For the packaging of products of all kinds for civilian or military use, modern automatic machinery is necessary to multiply speed and minimize manual labor.

Driven by dependable Diamond Roller Chains, A-B-C Case Sealers and Unloaders operate at high speed and low cost. Efficient operation is assured with minimum labor or attention.

Whatever the particular requirement, short or long centers, fast or slow speeds, unusual strain or shock—wherever transfer of power or material without waste or slip is important—DIAMOND ROLLER CHAINS perform with time and cost saving advantages.

DIAMOND CHAIN COMPANY, Inc.

Dept. 465, 402 Kentucky Ave., Indianapolis 7, Indiana

Offices and Distributors in All Principal Cities

Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

▼ BREVITY—Identify by IEN - 11355 If you write the maker ▼

Valves That Keep VISCOUS MATERIALS Flowing Freely

When you handle coal tar products, asphalts, resins, waxes, molten sulfur, varnish and other materials which congeal at ordinary temperatures, you won't be troubled with clogged valves if you use EVERLASTING Steam Jacketed Valves.

The ample jacket space of these valves surrounds the ports as well as the body . . . provides extensive heating surface and correct temperature to insure fluidity. Besides, the design of the valves is quick acting . . . non-wedging . . . and self-grinding . . . and they have the straight-through flow and lasting tightness that have made EVERLASTING Valves famous for over 40 years. Write for complete information.

EVERLASTING VALVE CO., 49 Fisk Street, Jersey City 5, N. J.
Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

EV-244A

Everlasting Valves

for everlasting protection

▼ BREVITY—Identify by IEN - 11356 If you write the maker ▼

PROFIT HAS MANY FORMS when the material is DUREZ

TWO PIECES REPLACE EIGHT

in TV picture tube deflecting yoke spool

To simplify assembly and safeguard brightness, symmetry, and freedom from exaggeration in TV pictures, a leading set maker developed this molded yoke-supporting spool, replacing an 8-piece pressed paper component. Durez general-purpose phenolic was selected and meets such requirements as very thin walls, dimensional exactness, freedom from warping, high insulating value, and heat resistance. Rim serves as 8-position terminal board, supporting resistors and capacitors in the assembled unit.

WARPING PREVENTED

in large unsupported areas

In this much larger piece . . . the base of a commercial popcorn warmer . . . similar objectives were gained by using a heat-resistant Durez compound. The 15"x 12"x 5" unsupported molding is reinforced with a simple system of molded-in ribs, assuring close control of shrinkage in cooling as well as freedom from warpage in service. Impact strength, self-insulation, and lustrous, easy-to-clean surfaces are other strong points of Durez materials.

AMONG THE MORE THAN 300 different Durez molding compounds are many designed to meet the requirements of MIL-P-14A. Competent field technicians will gladly help you choose and use the one that best fits your requirements. To keep abreast of new uses of the phenolics, write on your office letterhead for our monthly "Plastics News." Durez Plastics & Chemicals, Inc., 1711 Walck Road, N. Tonawanda, New York.

DUREZ

Phenolic Plastics that fit the job

▼ BREVITY—Identify by IEN - 11358 If you write the maker ▼

DRILLING . . Adjustable fixture for cross holes in rounds, hexagons

Source: MATHEWSON MACHINE WORKS INC.
16 Hancock St., Quincy 71, Mass.

An angle plate forms the base of this new fixture in which to drill cross holes in round stock and in hexagon work such as the heads of bolts or cap screws. The base carries a vertically adjustable drill-brushing bracket combined with an adjustable work-positioning stop. A drill-bushing carrier holds the slip bushing and also clamps the work in place. Three bushing carriers are provided for outside bushing diameters of 3/16, 1/2 and 3/4 in.

The hardened V-block has two 60-deg. V's to center round or hexagon stock in a range of sizes between 1/4 and 2 in. based on the round stock. Overall dimensions are 7 by 4 1/4 by 5 1/4 inches. Weight is 10 pounds.

▼ BREVITY—Identify by IEN - 11359 If you write the maker ▼

LUBRICATING . . Non-melting grease for plain and anti-friction bearings

Source: HOOD REFINING CO.
516 S. Pennsylvania Ave., Greensburg, Pa.

For water pumps universals, wheels

Multiplex trade names a new grease lubricant available in No. 00 to No. 3 grades. It is made with a bodying agent that provides stability in service and storage. The grease maintains its lubricity and adhesive characteristics under normal temperature conditions. It is insoluble in water, will absorb moisture in service without losing its adhesive or lubricating qualities. It is plastic and pumpable at temperature minimum at minus 20 to plus 15 deg. F. depending upon the grade It has been tested successfully in plain and anti-friction bearings under a range of temperature conditions.

▼ BREVITY—Identify by IEN - 11360 If you write the maker ▼

METER . . Miniature dc. unit mounts in hole measuring 9/16 inch

Source: ELECTRO-MECHANICAL INSTRUMENT CO.
810-14 Chestnut St., Perkasie, Pa.

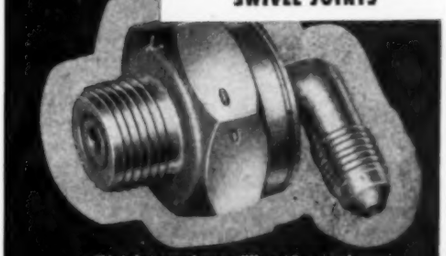
Shown about full size

Emico trade names a new sub-miniature meter available in ranges maximum at 1 to 25 milliamperes. Accuracy is within plus or minus 5 percent. Assembly is in a steel housing that can be mounted in a 9/16-in. opening. Overall length is 11/16 in. for 3/4 in. of clearance in back of a panel. The design is intended primarily for use by manufacturers of electronic and portable equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11361 If you write the maker ▼

CHIKSAN HYDRAULIC SWIVEL JOINTS



This is but one of many different Types and Styles of CHIKSAN Hydraulic Swivel Joints for application on all hydraulic lines which must turn or swivel. Pressure capacities range from 1000 psi. to 3000 psi. Write for Bulletin A. Or tell us your requirements and CHIKSAN Engineers will gladly cooperate with you in developing Hydraulic Swivel Joints to meet your requirements.

CHIKSAN

CHIKSAN COMPANY
AND SUBSIDIARY COMPANIES
Chicago 3, Ill. BREA, CALIFORNIA Newark 2, N. J.
WELL EQUIPMENT MFG. CORP. HOUSTON 1, TEXAS
CHIKSAN EXPORT CO. BREA, CALIFORNIA NEWARK 2, N. J.

BALL-BEARING SWIVEL JOINTS FOR ALL PURPOSES

▼ BREVITY—Identify by IEN - 11362 If you write the maker ▼

A MAGICIAN WITH A HUNDRED ARMS

A good definition of Spencer Vacuum as applied to industrial processes, and each arm does things no man could do It picks bran from tin plate rolls in motion. It gets inside the smallest tanks, the most delicate instruments, and fast moving products on a conveyor line. It removes liquids, metals or dust and it conveys chemicals, foods and sand by the ton.

Imagine trying to pick up globules of mercury every hour in an instrument plant or cleaning 500 acres of factory every night. Then write for the Spencer Bulletin 144 describing 132 unusual things that are being done with Spencer Vacuum every day.

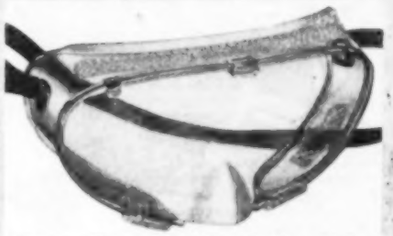
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

439-G

▼ BREVITY—Identify by IEN - 11363 If you write the maker ▼

WILLSON MonoGoggles®



Keep You on the Safe Side

- Wide angle vision
- Replaceable lens – clear or green
- Front and side protection
- Fits over spectacles
- Form-fitting frame
- Lightweight comfort

Write for Descriptive Bulletin

WILLSON®
Dependable Products Since 1870

WILLSON PRODUCTS, INC., 217 Washington St., Reading, Pa.

▼ BREVITY—Identify by IEN - 11364 If you write the maker ▼

You Need MODERN EQUIPMENT to Fight Soot ECONOMICALLY

GE AVI-F908 FURNACE CLEANER

This high vacuum, heavy-duty Furnace Cleaner is G-E engineered to do the job easily, quickly, economically. Weighs only 51 lbs. 1 full H.P. Readily converted into a powerful BLOWER. Moderately priced. Used regularly, it helps PAY FOR ITSELF in a single season.

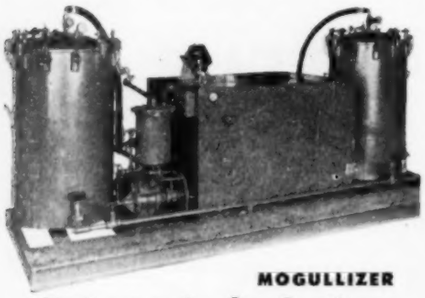
GENERAL ELECTRIC

General Electric Company, Dept. 22-3529
1285 Boston Ave., Bridgeport 2, Conn.

Send me, without obligation, details on G-E Heavy-duty Furnace & Boiler cleaning equipment.

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 11365 If you write the maker



MOGULLIZER

Eliminates Leaky Castings

If your contract calls for impregnation, or if your production castings leak or weep and will not hold pressure, investigate our Mogullizing system—a high vacuum and pressure method of sealing castings. Models to meet your requirements.

Any standard impregnating material can be used but for top efficiency we recommend our Mogul Cast Seal.

Prompt deliveries.

Write today for full details on the Mogullizing system.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 11366 If you write the maker

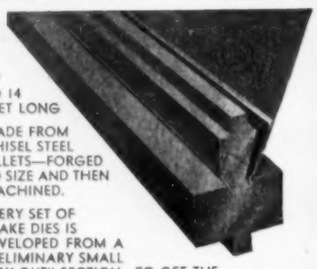
Abart Speed Reducers are precision built to give you years of maintenance-free service, even under severe operating conditions. There are 75 models in the complete line of Abart Speed Reducers...one of which will meet your exact requirement for each specific application. Ratings from 1/50 to 168 h.p. and ratios up to 10,000 to 1. Abart Speed Reducers are compact, oil-tight and sealed against dust. For heavy-duty, precision speed reducers, specify Abart.

SEND FOR COMPLETE CATALOG
It will aid you in selecting the Abart Speed Reducer which is exactly suited to your need.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

BREVITY—Identify by IEN - 11367 If you write the maker

BRAKE DIES



- UP TO 14 FEET LONG
- MADE FROM CHISEL STEEL BILLETS—FORGED TO SIZE AND THEN MACHINED.
- EVERY SET OF BRAKE DIES IS DEVELOPED FROM A PRELIMINARY SMALL "TRY-OUT" SECTION—TO GET THE RIGHT SHAPE ON YOUR MATERIAL, THEN
- WE MAKE YOUR SET OF PERFECT BENDING DIES.
- BY THE MAKERS OF THE FAMOUS SEMCO NIBBLER PRESS.

Write for Latest Literature, Ask for Estimates.

SEMCO
SERVICE MACHINE COMPANY INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

BREVITY—Identify by IEN - 11368 If you write the maker

DRILLING . . Portable electric tools, ¼ to ⅜ in., 110 or 220 volts

Source: STANLEY ELECTRIC TOOLS
478-82 Myrtle St., New Britain, Conn.

Drop handle is shown

Aluminum housing encloses a ball-bearing universal motor in each of the three sizes of this new portable electric drill. Each size is available with a drop handle or a spade-type handle. A trigger switch is provided with a safety locking device. A check guard is mounted removably over the chuck to protect the operator and finished work. A bearing retaining ring is supplied with each drill to replace the chuck guard when it is removed.

Speed is 1,500 rpm. on the smallest drill, 850 rpm. on the largest at no load. It is 900 to 500 rpm. under full load. Weight is 6 to 7¼ pounds. Overall length with the spade handle is 11⅝ to 12½ in. in the three available sizes.

BREVITY—Identify by IEN - 11369 If you write the maker

SHREDDING . . Rotary knife machine cuts scrap paper into long shreds

Source: VAN DYKE INDUSTRIES
3624-I Cahuenga Blvd., Los Angeles 28, Calif.

List is $90 to $775

Four machines, the smallest hand operated, are included in a recently improved line of shredding equipment to cut up newspapers, magazines and any other flat scrap paper into shredded form for packaging purposes. The machines take sheets ranging from 10 to 25 in. in width.

The smallest hand-operated unit will cut three sheets at one time. The largest will cut thirty-five. Shred size is ¼ or ⅜ in. in width. Cutter speed on the three motor-driven assemblies is 250 to 500 ft. per minute. Drive is by a ¼ to 1½-hp. motor. Weight is 25 to 400 pounds. Production capacity of the largest machine is 500 lb. per hour.

BREVITY—Identify by IEN - 11370 If you write the maker

MANAGEMENT . . What schools want from industry in the line of informative material, reported by booklet

Hill and Knowlton Inc.
350 Fifth Ave., New York 1, N. Y.

Results of a survey among school teachers and administrators are published in new 48-page booklet, "Education and Industry Cooperate". What kind of informative material schools can use, what types of material, field trips and their value, are typical. Almost half is recommendations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

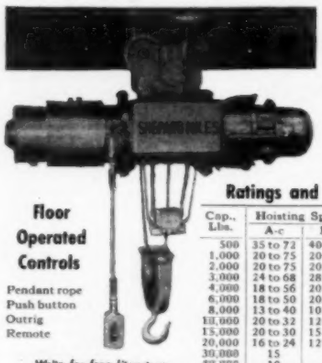
BREVITY—Identify by IEN - 11371 If you write the maker

BREVITY—Identify by IEN - 11372 If you write the maker

FOR WIDEST RANGE OF HOIST TYPES, CAPACITIES & CONTROLS

With Outstanding Wear-Eliminating Features

Single or multiple-speed control with positive load brake. "Balanced drive" distributes all stresses evenly. Oil bath lubrication assures long, trouble-free operation. Sealed housing keeps out abrasive dust and moisture. Anti-friction Bearings.



Types
- Lug suspension
- Hook suspension
- Base type
- Push trolley
- Geared trolley
- Motor-driven trolley

Floor Operated Controls
- Pendant rope
- Push button
- Outrig
- Remote

Write for free literature

Ratings and Capacities

Cap., Lbs.	Hoisting Speeds A-c	Hoisting Speeds D-c	Lift, Feet
500	35 to 72	40 to 68	Up to 110
1,000	20 to 75	20 to 75	Up to 185
2,000	20 to 75	20 to 52	Up to 185
3,000	24 to 68	28 to 55	Up to 166
4,000	18 to 56	20 to 43	Up to 166
6,000	18 to 50	20 to 38	Up to 128
8,000	13 to 40	10 to 29	Up to 163
10,000	20 to 32	12 to 23	Up to 138
15,000	20 to 30	15 to 22	Up to 87
20,000	16 to 24	12 to 17	Up to 87
30,000	15	13	Up to 43
40,000	10	10	Up to 43

Shepard Niles CRANE & HOIST CORPORATION
456 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

BREVITY—Identify by IEN - 11373 If you write the maker

* OVER 250 MILLION SQUARE FEET OF **Kalman** FLOOR . . .

Prove its Value!

More and more flooring is Kalman flooring, for Kalman has, over 35 years, become the word for serviceability, long term durability.

For a uniformly hard, wear-resistant floor, it will pay you, too, to become familiar with Kalman. Write for literature—ask about Kalman "absorption control", the key to floors at their toughest.

KALMAN FLOOR COMPANY
110 E. 42nd St., New York 17, N.Y.
Boston • Charlotte • Chicago • Cleveland
Dayton • Detroit • Houston • Los Angeles
Philadelphia • San Francisco

BREVITY—Identify by IEN - 11374 If you write the maker

FREE! Stainless Fastening Selector

Handy slide-chart makes your job simpler, saves valuable time! Instantly identifies A-N Nos. pertaining to stainless steel nuts, screws, bolts, rivets, cotter pins, washers; gives sizes, other data. Write for your FREE copy of Chart 51K TODAY!

Anti-Corrosive Metal Products Co., Inc.
Manufacturers of STAINLESS STEEL FASTENINGS
CASTLETON-ON-HUDSON, NEW YORK

▼ BREVITY—Identify by IEN - 11375 If you write the maker ▼

Investigate...

The NEW Struthers Wells IMPREGNATOR

For DEPENDABLE IMPREGNATION OF ELECTRIC COILS — WOOD CARBON PARTS — AND OTHER MATERIALS

The new Struthers Wells Impregnator for dependable, simplified impregnation of a wide variety of materials, is available in a complete line of sizes for vacuum and pressure operations—for use by heating with steam, electricity or Dowtherm, or for non-heated operations. Supplied in complete units as illustrated, or principal parts only may be specified if desired. • Heating systems are supplied if required.

Write today for Bulletin B-30

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA.
OFFICES IN PRINCIPAL CITIES

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ANOTHER **handy way**

to get the fastest, easiest metal-cutting — tell your supplier you want VICTOR hand and power hacksaw blades and flexible-back band saws.

Tell him, too, to send you some handy VICTOR Metal-cutting Booklets—authoritative, timely facts on the selection, use and care of metal-cutting equipment, plus handy hints on faster, easier production.

Sold only through recognized distributors

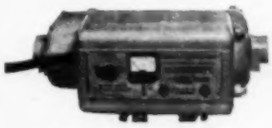
1079A

VICTOR
SAW WORKS, INC. • MIDDLETOWN, N.Y., U.S.A.
Makers of Hand and Power Hack Saw Blades, Frames and Metal Cutting Band Saw Blades

▼ BREVITY—Identify by IEN - 11378 If you write the maker ▼

BATTERY CHARGING . . Motor generator, timed control, for industrial battery

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



You can put it on a shelf

Small size, about 23½ in. in length by by 14 in. in depth by 10¾ in. in height, characterizes this new motor-generator type of battery-charging equipment for industrial-truck storage batteries. It has capacity for 6 to 19-cell lead-acid batteries and for 10 to 30-cell Edison batteries. It weighs 190 pounds. Operation is on 220/440-volt 60-cycle 3-phase ac.

Construction includes automatic disconnect from the power line with opening of the charging circuit in the event of power interruption, automatic restart upon resumption of power supply following an interruption, automatic control of the charging rate under the modified constant-voltage charging setup, automatic battery cut-off and charge shutdown when the battery has been fully charged. Generator and motor are both protected against overload.

▼ BREVITY—Identify by IEN - 11379 If you write the maker ▼

PROTECTING . . Accordion cover for planer and milling machine ways

Source: A & A MFG. CO.
2015-19 W. Clybourn, Milwaukee 3, Wis.

Material is oil proof

Fairprene plastic material is fabricated into accordion folds and correctly shaped to protect ways on milling machines and planers and to surround boring bars for exclusion of chips, dirt, abrasives. The unit expands and contracts with movement on the machine. A 24-in. mounting space is sufficient for a planer-way protector requiring extension to 20 feet. The company is prepared to supply each protector for specified application on a given machine.

▼ BREVITY—Identify by IEN - 11380 If you write the maker ▼

HANDLING . . Steel tote box stacks when filled and nests in storage

Source: CHAS. WM. DOEPKE MFG. CO.
Emerald & Blue Ash Sts., Dept. IEN, Rossmoyne, Ohio

You reach in either side

New size has been added to the twin-hopper Nestier tote box previously described IEN-12377-50. The new unit is made of 16-gage steel and is known as Model 220. It measures 22⅝ by 12⅛ by 7¾ inches. It weighs 15 lb. and is finished in green baked enamel. Filled units can be stacked upon one another to serve as bins from which the contents can be drawn from either side. Empty boxes nest within each other so 50 units will stand 62¾ in. in height.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 11381 If you write the maker ▼

"Solved our marking problem!"

say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . "for marking boxes, cartons, packages." Quick, clean, accurate, easy-to-use. Prints 1000 or more clear, sharp copies from one *stencil . . one inking.* Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber-stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES
At Your Office or Shipping Room Supply Dealer

MULTISTAMP
STENCIL DUPLICATOR

▼ BREVITY—Identify by IEN - 11382 If you write the maker ▼

THEY'VE GOT WHAT IT TAKES TO HANDLE ANY JOB AND KEEP A TIGHT GRIP ON RISING COSTS!

ILLINOIS GLOVES ARE BUILT TO LAST

Illinois Gloves are tough enough to handle any job . . . last longer under the roughest wear. Every thread, every material, every leather used in Illinois Gloves meets rigid tests for tensile strength and abrasion in contact with oil, heat, acids or water. That's what makes Illinois your most economical buy!

Write Industrial Division Illinois Glove Company for catalog & prices

ILLINOIS GLOVE CO., CHAMPAIGN, ILL.

▼ BREVITY—Identify by IEN - 11383 If you write the maker ▼

Kester Soldering FLUX

62 DIFFERENT FLUXES to meet Your Requirements

Kester makes a flux for every soldering operation because modern efficiency demands the correct flux for the job. Consult Kester's Technical Department on any flux problem.

Liquid Fluxes — Soldering Salts and Paste

Free — Technical Manual, "Solder and Soldering Technique"

KESTER SOLDER

KESTER SOLDER COMPANY
4201 Wrightwood Avenue, Chicago 39, Ill.
Factories also at
Newark, New Jersey • Brantford, Canada

▼ BREVITY—Identify by IEN - 11384 If you write the maker ▼

Combined
PNEUMATIC TOOL SUSPENSION AND AIR SUPPLY

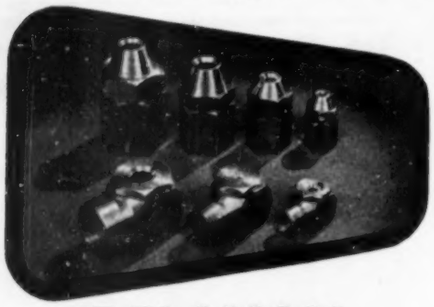
HOSE which supplies air suspends pneumatic tool directly over the work spot, always handy. Tool is counterbalanced by spring tension of reel. Releasing tool lifts it automatically to convenient position. No cable suspension, no dangerous loops of loose hose to cause accidents. Speeds up production, lessens fatigue, reduces tool maintenance cost, saves hose.

SEE YOUR JOBBER OR WRITE

Wayne
THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO

INDUSTRIAL HOSE REELS
FOR AIR, WATER, FLUID LUBRICANTS AND COOLANTS

BREVITY—Identify by IEN - 11385 If you write the maker



DELAVAN
SPRAY NOZZLES

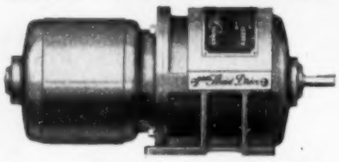
There is a standard Delavan Nozzle for any flow rate from 2 quarts per hour to 65 gallons per minute. Order DELAVAN Spray Nozzles and accessories for any spraying requirement.

WRITE FOR CATALOG NO. 30

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

BREVITY—Identify by IEN - 11386 If you write the maker

Act now on this
FREE TRIAL OFFER



Learn about Gýrol Fluid Drives *firsthand.*

We invite you to try American Blower Type TM Gýrol Fluid Drive in actual production right in your own shop, at our expense.

See for yourself how these remarkable units save power, provide smooth acceleration, provide overload protection, and absorb shocks.

To take advantage of this offer, write us direct. Describe the machine on which you want to use the TM unit and give horsepower of present motor. Then, we'll contact you to arrange installation and trial period.

AMERICAN BLOWER
American Blower Corporation, Detroit 32, Michigan
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 11387 If you write the maker

GET THE
Inside Facts
about unusual multi-purpose thermostat

Send *now* for free booklet explaining the operation of a unique thermostat. Find out how it can help you. Used to control heat, humidity, vapor level, radiant heat, pressure, and other variables, low-cost Fenwal THERMOSWITCH thermostats have a single-metal shell that expands or contracts *instantaneously* with temperature changes, making or breaking totally enclosed electrical contacts. Fast, accurate, sensitive.

Fenwal **THERMOSWITCH®**
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE...*but only to heat*

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111 South Burlington Ave., Los Angeles 4, Cal.
Temperature Control Engineers

MAIL TODAY

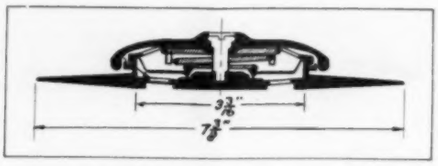
Please send me the Fenwal booklet "Everything you want in a thermostat."

Name ..... Position .....
Company .....
Street .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 11388 If you write the maker

VALVE . . Rubber base unit for relief duty on 2 lb. pressure

Source: ANDREWS-ALDERFER PROCESSING CO.
126-5 Ash St., Akron 8, Ohio



Is seeking new uses

Type A-120 is a new rubber-base pressure-relief valve initially developed for use on inflatable rubber boats. It is being made available now for industrial uses involving control of air pressure at 2 lb. with large volume exhaust at 3 pounds.

The working parts are mounted in the rubber base and are protected by a steel cap and a rubber shield. The operating parts are made of stainless steel and natural or neoprene rubber. Assembly is by cementing the valve base in position or by securing it through bolt holes that can be put in the base to specification for the intended application.

BREVITY—Identify by IEN - 11389 If you write the maker

COMMUNICATING . . Power supply for company's portable two way radio

Source: MOTOROLA INC.
4543-47 W. Augusta Blvd., Chicago 51, Ill.

The company announces development of a new power supply for operation on 110-volt ac. and a companion unit for 6-volt dc. input. The two are intended for use with the company's two-way radio-phone pack unit, previously described IEN-7610-50. They permit use of the radio in semi-fixed locations as in an office or in a motor vehicle. Connectors and leads are included. The radio plugs into a connector in the power-supply housing. Arrows indicate the two assemblies.

BREVITY—Identify by IEN - 11390 If you write the maker

POWDER METAL PARTS . . Designations compared in data sheet on powdered magnetic core materials

Metal Powder Association
420 Lexington Ave., New York 17, N. Y.

Data Sheet No. 1 lists designations of eight manufacturers of magnetic cores against the designations and trade names of 25 standard core materials. It shows what materials are used by each core maker, who uses each kind of material, corresponding core designations between makers. The sheet is letter size, punched for binding, is available on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 11391 If you write the maker

See for yourself how you can SAVE TIME and MONEY with CORBIN Self-Tightening HOSE CLAMPS

If hose connections are vital to your product or process, you can save time and money with Corbin Hose Clamps! They are *installed in seconds to hold tightly for years!* Simply squeeze the ends of the clamp with pliers, slip the clamp over the connection, release your grip — and *instantly* you have a uniform, lasting seal!

SAMPLES AND SPECIFICATIONS

Write today for detailed specifications and for samples of Corbin Self-Tightening Hose Clamps in the sizes that fit your needs. See for yourself how efficiently these low-cost, time-saving clamps meet every hose connection need! There is no obligation, of course. Write to:

Corbin Hose Clamps fit hoses in sizes from .84" O.D. through 2.56" O.D. They are made of heat-treated steel, treated to protect against rust and corrosion. They are used for rubber, fabric and plastic hose — to convey air, gases or liquids.

CORBIN
CORBIN HOSE CLAMP DIVISION
THE AMERICAN HARDWARE CORPORATION
New Britain, Connecticut

BREVITY—Identify by IEN - 11392 If you write the maker

RHOADS *Tannate* UNI-PULL DRIVE

FOR TROUBLE-FREE POWER TRANSMISSION

Every second, every minute, every hour —year in and year out—Rhoads Tannate UNI-PULL Drive assures smooth, consistent transmission of power. The pivoted motor base automatically maintains the proper belt tension regardless of fluctuating load conditions . . . and Rhoads Tannate Leather Belting, with its superior gripping surface that results from our exclusive tanning process assures long, trouble-free performance.

Write for Rhoads Tannate UNI-PULL Drive Manual.

PRODUCERS OF FINE LEATHER FOR 249 YEARS
J. E. RHOADS & SONS
35 North Sixth Street, Philadelphia 6, Pa.

BREVITY—Identify by IEN - 11393 If you write the maker

M.Z.B. *Mauser Type*
PRECISION VERNIER CALIPERS
The most popular PRECISION MEASURING TOOL *the world over*

Leather cases $1.00 extra

$14. Postpaid

Featuring
- For measuring outside, inside and depth
- Measuring capacity 5¼"
- Each caliper has two accurately divided scales and verniers to read
  - (A) Decimals to .001" and 1/20 m/m (Cat. #30-64)
  - (B) " " .001" and 1/128" (Cat. #30-61)
- Full visibility of scales in all positions
- Clear cut markings
- In most cases no magnifying glass needed
- Special chrome steel, spring tempered, glass hard on measuring surfaces
- Setting remains fixed and will not shift when pressure on lock is released

Stainless steel and large sizes also available

WRITE DEPT. C
INTER-CONTINENTAL TRADING CORP.
90 WEST STREET, NEW YORK 6, N. Y.

BREVITY—Identify by IEN - 11394 If you write the maker

"PAID FOR ITSELF ON ONE JOB!"

Foredom FLEXIBLE SHAFT MACHINES

have many time-saving applications but users often find a Foredom REPAYS ITS COST on ONE JOB through eliminating an expensive disassembly and re-set job on such tasks as removing high spots on gears and touching up tools or cutters in a production set-up. The secret's in Foredom's extra small handpieces which handle like a pencil and penetrate into spots inaccessible for other tools.

Indispensable for "SMALL WORK" GRINDING AND FINISHING JOBS

Foredoms are profitable additions to ALL 3 departments—Production, Tooling and Maintenance. 5 HANDPIECE TYPES (all instantly interchangeable) produce versatility to a marked degree.

SPOT THEM LIBERALLY ABOUT THE PLANT for emergency and every-day use. Their cost is negligible. Prices start at $17.75.

Quality Tested Since 1922

SEE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR. IF HE CANNOT SUPPLY YOU WRITE TO US. MAIL COUPON FOR CATALOG.

FOREDOM ELECTRIC CO., Dept. N-4148
27 Park Place, New York 7, N. Y.
Send your catalog No. N-4148 showing different uses of Foredom Flexible Shaft Machines.
Name .....
Address .....
City & Zone ..... State .....

BREVITY—Identify by IEN - 11395 If you write the maker

Natural Graphite puts "MORE MUSCLE" into grease!

FOR EXAMPLE:

OPEN GEARS
rough treatment

CONVEYORS
moisture, corrosion

STOKERS
high temperatures, dirt

In Fact: – for all applications where conditions of dirt, dust or moisture prevail.

Greases combined with Dixon *Natural* Graphite provide outstandingly effective lubrication *under even severest conditions* ...where dirt and dust abound; rain and moisture; high pressures; temperature extremes; shock loads.

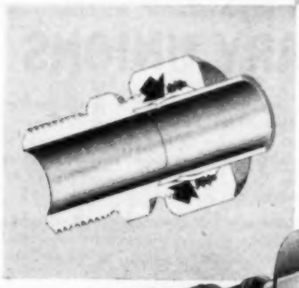
Dixon *Natural* Graphite is practically indestructible. It withstands extremes of heat and cold. It is insoluble. Inert, it is unaffected by acids and alkalies. Processed under closest laboratory control.

What is your toughest lubricating problem? Tell us the full particulars . . . our technical department will analyze your problem and send you specific recommendations and a sample of the proper Dixon lubricant. No obligation. Write, Joseph Dixon Crucible Co., Jersey City 3, N. J.

DIXON NATURAL GRAPHITE

BREVITY—Identify by IEN - 11396 If you write the maker

This Weatherhead ERMETO "ring"...



Notice drawing at left. See how ERMETO nut presses sleeve as threads engage. Forces acting on sleeve cause it to bow slightly and actually shear into the surface of the tube. This strengthens the seal, distributes vibration strains and holds a constant tension between body and nut to prevent loosening.

gives you timesavings up to 60% on steel tubing installations...up to 40% on copper and aluminum

The Weatherhead ERMETO "ring" or hardened sleeve is the heart of the fitting—enables tube connections to be made at all pressures —economically at low pressures, *safely and economically* at elevated hydrostatic pressures. There's NO FLARING, NO THREADING, NO WELDING, NO SOLDERING—*fast installation with no tools but a wrench!* Easy disassembly and retightening with a pressure-tight joint. Ermeto meets J. I. C. Requirements.

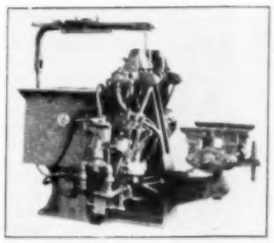
WRITE for complete details—get ERMETO CATALOG NO. E-1457 for information on ERMETO sizes, types, installation. Address: Dept. F-1, The Weatherhead Company, Cleveland 8, Ohio.

The Mark of Quality
WEATHERHEAD
FIRST IN HYDRAULIC CONNECTIONS

BREVITY—Identify by IEN - 11398 If you write the maker

FOUNDRIES . . Molding machine, jolt, rock-over, pattern draw design

Source: SPO INC.
6452 Grand Division Ave., Cleveland 25, Ohio



One of six models

Model 5050 is a new assembly in the company's line of molding machines. It provides 600-lb. jolt capacity on 80-lb. air-line pressure, a 10-in. pattern-draw stroke, flask space ranging from 13½ to 18 in. and flask-width capacity to 27 inches. It can handle flasks of any length. The table to which the pattern is bolted measures 26 by 30 inches. The machine weighs 2,850 pounds.

In operation the flask is jolt rammed, sand is struck off, the bottom board is bedded against the flask and the clamp is positioned. Table and flask are then rocked over to settle on leveling bars at the rear of the machine. These bars are locked against the bottom board by operating a valve and the two-speed draw operation is actuated by either a hand or foot-operated valve. Pattern draw begins slowly and accelerates to finish the stroke. The operator then resets the rock-over control valve and the table returns to jolt position to complete a cycle.

Twin jolt cylinders are employed for both the jolting and the drawing operations. They operate in tandem to eliminate need for external guides. The rock-over table locks in both jolt and pattern-drawn positions. One-piece construction of the table makes it unnecessary to employ mechanical devices to prevent the pattern from shaking loose during jolting.

BREVITY—Identify by IEN - 11399 If you write the maker

PROJECTING . . Microfilm readers to view 16 or 35 mm. microfilm record

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Griscombe Portable, to the left in the illustration, is one of three new microfilm readers. It weighs 17 lb. with its case. It can be employed to project images on vertical screens or light colored walls for group reference. The carrying case contains space for a screen, an extra lamp and lens and rolls of microfilm.

Library Reader, in the center of the illustration, is equipped with an 18 by 18-in. screen to take a full newspaper page at 17 magnifications. The image is sharp and clear in normal daylight for the microfilm projection.

Film-A-Record Model 9, to the right, is a manually-operated unit weighing 28 pounds. It magnifies the image either 24 or 43 times and can be adapted for other magnifications. It is designed for standard office use and carries its own screen.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11400 If you write the maker

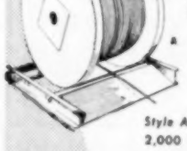
Reels Just Go Rollin' Along To Job Or Storage

Why push, shove, pull or rely on jacks when the most efficient way . . . the quickest way . . . the most economical way is to use

ROLL-A-REEL

It's husky, long-lived, easily carried to reels, job or storage. The low slanted front and positive front lock insure quick loading or unloading.

Remove wire, cable or rope from top or bottom, front or back of reel.



Style A:
2,000 lbs. cap. . $37.50

Style B.
4,000 lbs. cap. . $75.00

• PROMPT DELIVERY. ORDER NOW!

ROLL-A-REEL
327 West Fourth St. Cincinnati 2, Ohio

BREVITY—Identify by IEN - 11401 If you write the maker

CONTROL POWER BETTER

ROCKFORD CLUTCHES

BREVITY—Identify by IEN - 11402 If you write the maker

NOW READY...new line of HEAVY-DUTY

Milwaukee "SUPER" HOLE-SHOOTERS

NEW...

- Die-cast aluminum housings — lighter wt. — perfect balance.
- Helical-cut steel gear trains — more power — higher torque.

Ball and roller bearings throughout for longer service-life

• LOWER PRICES
½"—$59.50 ⅝"—$69.50
¾"—$79.50 ⅞"—$89.50

Ruggedly built for heavy-duty production and maintenance, "SUPER" HOLE-SHOOTERS will give you *higher* load-speeds, *cooler* performance and *more hours* of service-free drilling than you have believed possible . . . and at *lower* operating cost. Write for FOLDER D-1.

MILWAUKEE ELECTRIC TOOL CORP.
5360 West State Street, Milwaukee 8, Wisconsin

BREVITY—Identify by IEN - 11403 If you write the maker

Cost-Cutter FOR INDUSTRIAL CAFETERIAS

MODEL 805 SPEED-LOAD SLICER
The perfect all-around slicer for industrial cafeterias. You change products fast. Slice vegetables, cheese, boneless hot or cold meats, poultry. Vegetable chute available for fast slicing of potatoes, radishes, etc.

DEPENDABLE. This slicer is precision-built to last. Sharpening stones, that swing clear when not in use, keep blade keen.

SAFE. Operator is protected at all times. Light on switch shows when slicer is running. Adjustment for knife wear keeps it safe.

EASY TO CLEAN. Gleaming white finish wipes clean in a jiffy. Guards are removed without tools.

U.S. BERKEL Write for Illustrated Literature on Slicers • Choppers • Meat Saws • Tenderloin Machines

U. S. SLICING MACHINE COMPANY, INC.
1101 Berkel Building La Porte, Indiana

BREVITY—Identify by IEN - 11404 If you write the maker

Air or hydraulic power—applied by T-J Cylinders—gets an amazing lot of tough jobs done for industry . . . *faster, more efficiently,* and at *lower cost!* Use T-J Cylinders for a wide range of pushing, pulling, lifting, clamping or control jobs . . . 100 lb. or 50,000 lb. Many standard sizes and styles . . . both cushioned and non-cushioned types . . . precision-built, dependable. Write . . . The Tomkins-Johnson Co., Jackson, Mich.

35 YEARS EXPERIENCE

TOMKINS-JOHNSON

BREVITY—Identify by IEN - 11405 If you write the maker

UPKEEP COST ONLY $3.36 PER TRUCK-MONTH!

This Elwell-Parker with a 144" low-lift platform loads and unloads autoclaves.

At a processing plant, one Elwell-Parker industrial truck has carried an average of *660 tons in 24 hours—six days a week for over 28 months!* Another E-P truck has already seen 35 months of service. During the total of 63 truck-months, cost of parts and tires was $211.64. Thus upkeep cost averaged just $3.36 per month . . . "We are *pleased indeed* with this equipment," reports the plant manager. The order of a third Elwell-Parker is further evidence of customer satisfaction.

FREE BOOKLET *fully explains scientific materials handling. Ask for "Industrial Logistics".*

THE ELWELL-PARKER ELECTRIC COMPANY
4065 St. Clair Avenue • Cleveland 3, Ohio

BREVITY—Identify by IEN - 11406 If you write the maker

BEATTY *Machines*

SPEED YOUR PRODUCTION

There's a better-designed, better-built BEATTY machine for practically every metal-working application. If you have a production problem, let a Beatty engineer study it.

BEATTY No. 11-8 Heavy Duty Punch for production tooling and use with BEATTY Spacing Table.

BEATTY CoPunShear — one compact unit handles Coping, Punching, Shearing.

BEATTY Horizontal Hydraulic Bulldozer for heavy forming, flanging, bending.

BEATTY MACHINE & MFG. CO. HAMMOND, INDIANA

BREVITY—Identify by IEN - 11407 If you write the maker

COMMUNICATING . . Telephone, voice powered for gas mask wearers

Source: MINE SAFETY APPLIANCES CO. 21 Braddock Ave., Pittsburgh 8, Pa.

For safe talk with danger point

An individual located in a safe position talks and listens at a hand set connecting through a 125-ft. cable on a revolving reel on this equipment. He can hold a two-way conversation with a worker wearing a gas mask or oxygen breathing apparatus connected into the outer end of the cable. Maskfone is the trade name. Application can be made with any design of the company's gas mask, hose, mask or oxygen breathing apparatus that is equipped with the All-Vision face piece and Cleartone speaking diaphragm. The equipment is self-contained and is powered by the operator's voice so no batteries or external power source is required.

Note . . Information concerning this development was initially released by the company for publication just about a year ago. It is published here in view of our having missed it editorially at that time.

BREVITY—Identify by IEN - 11408 If you write the maker

PRESS TOOL . . Strip stock feed mounts on die set, width to 2 inches

Source: PRODUCTO MACHINE CO. 988-92 Housatonic Ave., Bridgeport 1, Conn.

Surefeed is a new lever-type positive-acting strip-stock feed that mounts on a die holder and is operated by the punch holder for positive adjustable feed of strip stock on the "up" stroke of a press.

Feed length is to 2 in. for presses having 1½ in. or more of stroke. It is to ¾ in. for presses having a 1-in. stroke, although feed to 1¾ in. can be specified for the 1-in. stroke press in which case a removable stop is supplied. The mechanism will handle strip stock to 2 in. width and to 0.045 in. in thickness. Weight is 10 pounds.

BREVITY—Identify by IEN - 11409 If you write the maker

PLANT SITES . . Pocket data booklet of facts on Atlanta from an industrial standpoint

Atlanta Chamber of Commerce
33 Pryor N. E., Atlanta, Ga.

1951 edition of "Facts in Figures about Atlanta" describes the city from altitude to water meters in its 44 pages. Major topics include population, transportation, communication, fuel, government, housing, financial, climate, education.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11410 If you write the maker

THINKING OF STAINLESS?

THINK OF **ALLMETAL** FOR THE FINEST IN **STAINLESS STEEL FASTENERS**

FOR QUALITY AND DELIVERY

Complete facilities under one roof assures controlled quality and immediate delivery. Standard and "AN" specs. Specials to order.

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

Write for Catalog K

MANUFACTURERS SINCE 1929
ALLMETAL SCREW PRODUCTS COMPANY, INC.
33 GREENE STREET NEW YORK 13, N. Y.

BREVITY—Identify by IEN - 11411 If you write the maker

In plants which actually manufacture the acids and alkalies you use, Prufcoat has been providing positive protection against costly corrosion for over 10 years now . . . on *concrete floors, walls, ceilings, structural steel, tanks and other equipment.* Write for Prufcoat literature.

Where Acids or Alkalies Destroy Prufcoat PROTECTS

NEW! **PRUFCOAT METAL-REACTIVE PRIMER P-10**

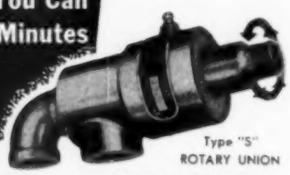
Does not require as complete surface cleaning as most other primers, works well on damp or dry surfaces. Write today for Prufcoat Technical Bulletin 012.

Prufcoat Laboratories, Inc.
50 East 42nd Street
New York 17, N.Y.

Preventive Maintenance PAYS!

BREVITY—Identify by IEN - 11412 If you write the maker

The Joint You Can Install in Minutes . . . and Forget



Type "S" ROTARY UNION

ROTARY UNIONS

(TRADE NAME)

Standard ROTARY UNIONS are the most efficient connection to revolving shafts or drums for heating or cooling purposes . . . for applications such as Steam up to 150 P.S.I., Hot Oil to 500° F, Coolants, Air, Gases, Water, Brine, Vacuum, Alternate Mixtures, at speeds up to 1000 R.P.M. Special models for higher speeds, pressures, and Dowtherm.

Each ROTARY UNION is a self-contained unit and can be installed in a few minutes. Its novel and accurate construction takes the strain from moving and sealing parts, thus lengthening its effective life far beyond that of other joints.

"Where Good Connections Count"

Write for full information or for free consultation. Prompt deliveries from stock.

PERFECTING SERVICE CO.
332 Atando Ave. (Home Office and Factory), Charlotte, N. C.
Offices in Chicago • Cleveland • Philadelphia • Providence • Jersey City

BREVITY—Identify by IEN - 11413 If you write the maker

ROTARY CONCRETE DRILL BITS

for precision holes thru concrete in fraction of usual time

RCD CONCRETE DRILL BIT
The Original and Unsurpassed

DRILL BILLY says: *"Drill thru any masonry with RCD Drill Bits"*

Not a precious second is wasted in drilling holes with the original RCD Concrete Drill Bit. Its pulverizing action takes the Bit through concrete, marble, or rock much faster and easier. This lowers time costs. Used with electric or air rotary drills. Standard sizes ¼" to 2" diameter. *Free factory re-sharpening until further notice.*

Send for new low prices and illustrated literature

Personalized guarantee given to every RCD Drill Bit user.

ROTARY CONCRETE DRILL CO.
642 S. Arroyo Parkway • Pasadena 1, Calif.

BREVITY—Identify by IEN - 11414 if you write the maker

Making more steel is hot work!

Two-stream Projector with Automatic Stream Control

There's one way to keep steel production at the top—and keep workers comfortable—insure a plentiful supply of cool, refreshing water throughout the plant. In most steel mills, quite naturally, you'll find Halsey Taylor Electric Coolers do the job—and do it better! Extra hygienic features, trouble-proof, economical!

The Halsey W. Taylor Co., Warren, O.

HALSEY TAYLOR
COOLERS & FOUNTAINS

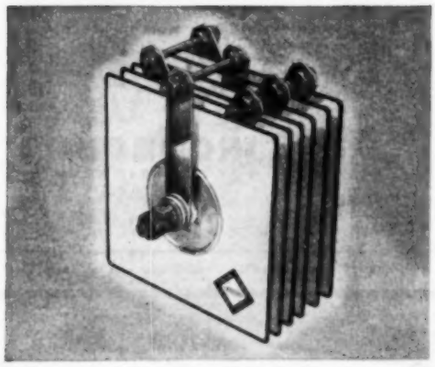
BREVITY—Identify by IEN - 11415 if you write the maker

The NEW Belcon

BALANCED WATTAGE

SELENIUM RECTIFIERS

WILL MEET YOUR EXACTING REQUIREMENTS FOR MAGNETIC AMPLIFIER APPLICATIONS



● Selenium rectifiers for use in modern magnetic amplifiers, must have special rectifier characteristics in order to achieve the maximum results when used with the newer grain oriented toroidal cores.

Belcon Balanced Wattage Rectifiers are manufactured to have these special characteristics: They have a very much higher forward to reverse-current ratio — as high as fifteen hundred to one or better; they have a low forward-voltage drop — usually as low as 1.2 volts per cell.

Belcon also manufactures a complete line of Rectifiers for industrial applications as well as specialized Rectifiers to fit unusual applications. Such units are frequently smaller in size and therefore may cost less than the standard line due to the exclusive Belcon Balanced Wattage principle.

WHY BALANCED WATTAGE

Belcon employs a variable blocking voltage — current density ratio resulting in a balanced wattage rectifier. A Belcon Rectifier processed to block 40 volts rms, for example, will deliver 1 ampere; the same size rectifier processed to block but 20 volts rms will deliver 2 amperes or more.

BELCON RECTIFIERS

Division of Bogue Electric Manufacturing Company
40 IOWA AVENUE • PATERSON 3, N. J.

Bogue

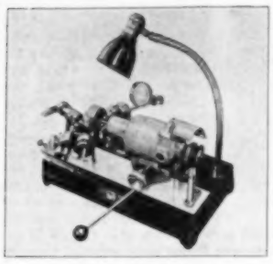
MAGNETIC AMPLIFIERS
MAGNETIC CONTROLLERS
AC & DC MOTORS
AC & DC GENERATORS
VOLTAGE & SPEED REGULATORS
SWITCHBOARDS

BELCON

BREVITY—Identify by IEN - 11417 if you write the maker

GRINDING . . Drill sharpener for drills from No. 70 to 1/4 inch

Source: DUMORE CO.
1251 14th St., Racine, Wis.



Works well in tool crib

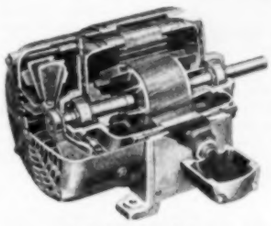
A broken drill or one requiring web thinning prior to resharpening is positioned on a combination rest and diamond holder at the right-hand side of this new bench mounted machine. Here a thinner wheel and one for rough grinding are mounted on the shaft of the 1/5-hp. 110-volt universal motor. Following this preparatory grinding, the drill is secured in a chuck which permits set-up for any included angle from 90 to 160 deg. and any clearance angle from 5 to 15 degrees. The chuck is provided with in-feed for fine resharpening and for use with very small drills. The grinding is accomplished by a 2 by 3/8-in. wheel mounted on the shaft at the left-hand side of the motor.

Standard equipment includes a 1/4-in. collet, a chuck-extension drill holder for No. 52 to No. 70 drills, a diamond wheel dresser and a set-up gage. A complete range of collets from No. 70 to No. 1 in the number sizes, from 0.65 to 6.3 mm., from 1/32 to 1/4 in. in fractional sizes and A to E letter sizes are available to specifications.

BREVITY—Identify by IEN - 11418 if you write the maker

MOTOR . . Totally enclosed design, explosion proof, rates from 3 to 75 hp.

Source: U. S. ELECTRICAL MOTORS INC.
202 E. Slauson Ave., Los Angeles 54, Calif.



End plate guards fan

Type SE and SES are new motors in the company's line for use in locations in which volatile liquids, highly inflammable dust or dangerous substances are handled or stored in close proximity. A serially-numbered metal label is attached to the motor as evidence of inspection of the assembly.

Type SD and SS are intended for plants where non-explosive conditions require protection against non-combustible dust, dirt, moisture, abrasive and corrosion-forming drippings. This motor does not require the Underwriters' label.

Design features include sealed terminals, elongated spark-arresting bearing sleeves, streamline housing, Hi-draft ventilation, removable cover, split-hub fan, normalized castings, Lubri-Flush bearings, asbestos-protected windings, solid Centricast rotor.

Bulletin 1629, 8 pages, illustrates and describes the motors in detail, shows internal construction and available types.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11419 if you write the maker

BREVITY—Identify by IEN - 11420 if you write the maker

Strongly constructed—all in one piece—yet small and compact, to fit in tight quarters. UL approved. Only 6 sizes cover a range from No. 14 to 1,000,000 CM. Specify Blackburn and get a quality lug in the low price field.

JASPER BLACKBURN CORP.
35 Madison St., St. Louis 6, Mo., CEntral 3007

BREVITY—Identify by IEN - 11421 if you write the maker

CUTS METAL FAST AND ACCURATELY

Whether you shear 26 gauge or one inch thick metal, you want smooth, straight, burrless cuts. Resulting pieces must be accurate within close tolerances.

In addition, you want a machine that performs for long periods without need of adjustment and maintenance. It must be easy to operate and be provided with ample safety features. Knives must stay sharp after thousands of cuts.

No machine meets these requirements better than a Steelweld Shear. We urge you to get the facts.

STEELWELD Pocket-Blade SHEARS CATALOG No. 2011

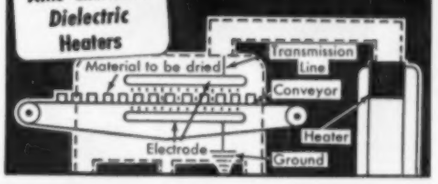
Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4233 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

BREVITY—Identify by IEN - 11422 if you write the maker

For Speed and Uniformity in Process Drying



ALLIS-CHALMERS dielectric heaters present interesting possibilities to manufacturers needing high speed, or uniform drying in their processes.

The standard ovens originally developed for core drying and twist setting can actually be used for drying many other products.

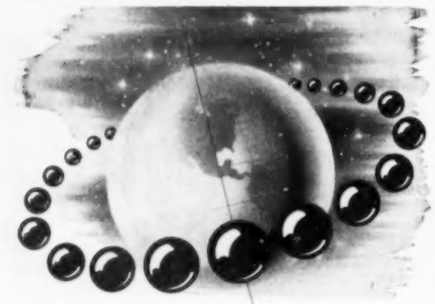
Allis-Chalmers dielectric heaters fit into production techniques. Continuous conveyors carry material between the electrodes for drying. Because drying time is a matter of minutes, and the oven is short, space requirements are considerably less than conventional conveyor type ovens, or batch ovens plus racks.

Get engineering and cost studies from your nearby Allis-Chalmers Office, or write Allis-Chalmers, Milwaukee 1, Wis.

A-3358

ALLIS-CHALMERS

BREVITY—Identify by IEN - 11423 If you write the maker



Around the World it's

HOOVER BALLS

made of

CHROME STEEL - CARBON STEEL - STAINLESS STEEL BRASS - BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL AND BEARING CO.
Ann Arbor, Michigan

BREVITY—Identify by IEN - 11490 If you write the maker

HANSEN

Hardened steel nozzles for long wear. Removes rust, paint, carbon. Prepares metal for soldering and welding. Holds 3 pounds silica sand, works efficiently with 80 to 125 pounds compressed air. Air Blow Gun, which is a detachable part of sand blast cleaner, may be purchased separately, for blowing dust, dirt, etc. Has ¼" hose stem connection. Write for catalog.

Write for catalog showing complete line of one-way shut-off, two-way shut-off and straight-through quick connective couplings—also hose clamps, air spray cleaners, etc.

THE HANSEN MANUFACTURING COMPANY
4041 WEST 150th STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 11425 If you write the maker

MINNEAPOLIS MOLINE MM MODERN MACHINERY

INDUSTRIAL WHEELERS

for material handling or equipment

27 hp and 51 hp max. developed engine hp Models

Manufacturing and processing plants use Minneapolis-Moline heavy duty wheel tractors on unusual yard handling operations. A wide selection of attached tools is available for moving bulk or palletized material with small investment.

Manufacturers also use MM wheelers to mount graders, stevedore cranes, revolving cranes, and sweepers. Specifications available on request or ask for recommendation for your product. Engineering service available.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 11426 If you write the maker

TESTING . . Hand operated machine applies Erichson test for ductility

Source: J. ARTHUR DEAKIN & SON
150-30 Hillside Ave., Jamaica 2, N. Y.

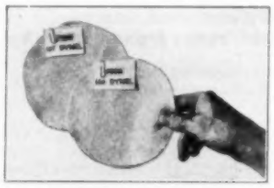
Test pieces of metal measuring 3½ by 3½ in. and to $^{5}/_{64}$ in. in thickness or sheets and strips to $2\frac{1}{16}$ in. in width can be tested in this new machine with standard tools. Interchangeable tools can be supplied to check narrow strips to the gage set at zero and the test piece is clamped in the machine with both fingers of 1 in. in width. In each case the test piece is clamped in the machine with both fingers of the gage set at zero and the round-end test head is moved forward by the hand wheel.

When fracture occurs the main gage finger moves back leaving an indicating finger to show the maximum deflection. This deflection and the value stated per division permit calculating the maximum pressure exerted. Three sizes read to a maximum of 20 ton. Depth of impression required to obtain the fracture represents the "standard value" which is the basis of workability of the test piece.

BREVITY—Identify by IEN - 11427 If you write the maker

FILTERING . . Synthetic fabric is chemical resistant to 250 deg. F.

Source: FILTRATION ENGINEERS INC.
153-57 Oraton St., Newark 4, N. J.



Another use for Vinyon-N

Two new fabrics, Feon 166 a twill weave, and Feon 167 a broken-chain weave, have been added to the company's line of dynel filter fabrics for use in any type of pressure or vacuum filter, centrifuge or dry-filtration equipment. The material is available as yard goods or can be cut to shape as specified. It seals readily.

The spun staple fibre is made of Vinyon-N which is virtually unaffected by most concentrated mineral acids, has excellent resistance to a range of organic acids, bases and salts.

BREVITY—Identify by IEN - 11428 If you write the maker

FUEL OIL . . Textbook of 160 pages describes properties, selection, handling, burning

Industrial Press
148 Lafayette St., New York 13, N. Y.

Non-technical treatment is employed in new "Fuel Oil Manual", a presentation of practical information intended primarily for the user. List price is $3.50. Topics include grades and types, properties and their measurement, preheating, storage, transportation, specifications. One chapter covers treatments such as additives. Another lists 22 common troubles and remedies dealing with fuel oil.

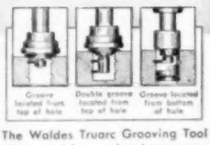
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11429 If you write the maker

Waldes Truarc Internal Grooving Tool

for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!

Manufactured under U. S. Pat. 2,411,426



Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate...readily adaptable to individual requirements.

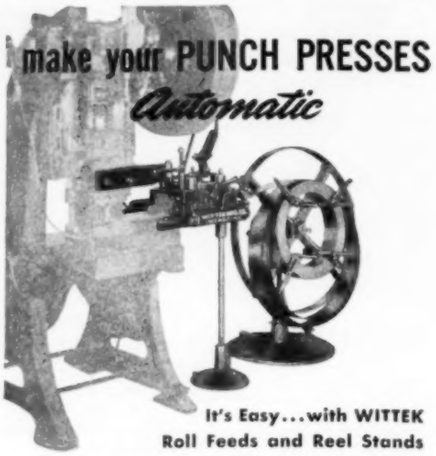
Designed for use in any hand drill or automatic drill press and screw machine...assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling...resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes...extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

BREVITY—Identify by IEN - 11430 If you write the maker



It's Easy...with WITTEK Roll Feeds and Reel Stands

Wittek Roll Feeds handle any type of coiled strip stock and are made in single roll, double roll, and compound types with straighteners, in models to feed in any of four directions. They are reliable and accurate with simple, quick adjustment of feed length. Standard sizes and models meet a wide variety of press size and capacity conditions.

Wittek Reel Stands facilitate handling coiled stock.

Write for full particulars

WITTEK Manufacturing Co. Automatic ROLL FEEDS AND REEL STANDS
4336 W. 24th Place, Chicago 23, Illinois

BREVITY—Identify by IEN - 11431 If you write the maker

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

• An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items. **The HAULER** for cases, crates, tote boxes, etc. **The HUSKY** for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 11432 If you write the maker

Speed Up Production
Secure Greater Uniformity
Save Time, Labor, Fuel

with more than 2,000 manufacturers now using

ROSS INDUSTRIAL AIR SYSTEMS

DRYING . . . . . BAKING
CURING . . . . . COOLING
HEAT TREATING . . . AGING
CONDITIONING

ROSS PAINT FINISHING Systems insure complete coordination of all component parts—conveying, cleaning, rust proofing, dry-off, cooling, painting, baking, hardening. Long experience and outstanding facilities for designing, engineering, manufacturing and installing insure maximum production and operating efficiency with ROSS built equipment. Catalog on request.

J. O. ROSS ENGINEERING CORPORATION
MANUFACTURERS OF AIR PROCESSING SYSTEMS
444 MADISON AVENUE NEW YORK 22, N. Y.

Chicago • Detroit • Boston • Los Angeles • Montreal • London

BREVITY—Identify by IEN - 11433 If you write the maker

Now—have a spic and span floor around machines!

Here's a flooring tip for the man who likes his plant to look as neat as his office.

Tuff-Tex* is a unit-laid, plastic-asbestos tile which is *highly resistant to greases and oils.*

It withstands heavy traffic, has high flexural strength, can take floor vibrations. It also resists impact from dropped objects.

Left unwaxed, Tuff-Tex provides safe, non-slip footing.

Quickly installed, easily cleaned, it is proving a "natural" for commercial kitchens, laboratories, service stations and such places as well as for factory areas.

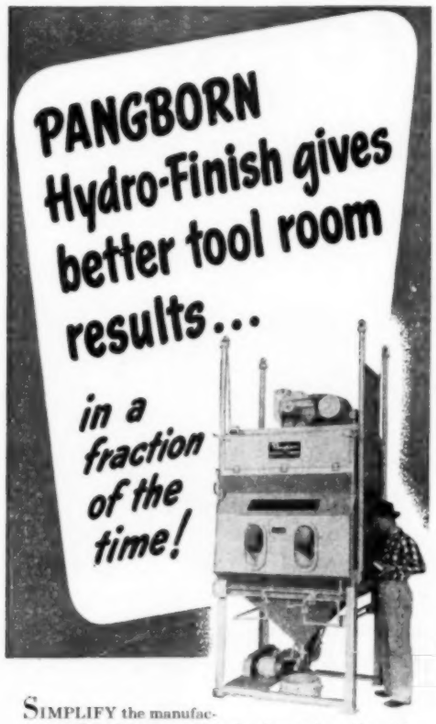
FREE literature shows the wide range of colors. Write THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley St., Chicago Heights, Ill.

AND FOR THE OFFICE, USE TILE-TEX®. . THE QUALITY ASPHALT TILE

TILE-TEX FLOORING PRODUCTS

*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY

BREVITY—Identify by IEN - 11434 If you write the maker



SIMPLIFY the manufacture and maintenance of tools, dies and molds with versatile Pangborn Hydro-Finish. It reduces usual costly handwork and produces a surface virtually free from directional grinding lines.

And on the production line, use Hydro-Finish to eliminate many tedious finishing operations. It reduces cost and time involved in buffing. It lessens fatigue failure and cuts manufacturing costs.

Hydro-Finish is the new, versatile impact blasting process that uses a fine mesh abrasive suspended in water. Tolerances are held to .0001 of an inch.

FIND OUT TODAY how Hydro-Finish can pay off for you. Write for Bulletin 1400-A to PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

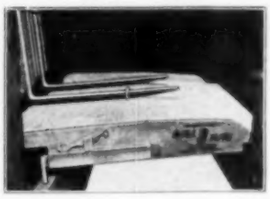
Look to Pangborn for the latest developments in Blast Cleaning and Dust Control.

Pangborn
BLAST CLEANS CHEAPER
with the right equipment for every job

BREVITY—Identify by IEN - 11436 If you write the maker

FLOORS . . Steel dockboard bridges platform gap to car or truck

Source: ROLL-RITE CORP.
803 Jefferson St., Oakland 7, Calif.



Bridge Ramp designates new steel dockboard equipped with a recessed stirrup with which it can be picked up by a fork truck to be moved and positioned. Construction includes side guards with protected rounded corners, safety plate treads, car-door stops and door-track guards. A positive locking device holds in operating position. The unit is crowned for dock height variation. It is reinforced with trusses and bottom braces to support loads to 7½ ton.

Sizes range from 66 to 108 in. in width, 36 to 72 in. in length. The 36-in. unit has span adjustment from 14 to 27 inches. The 72-in. assembly spans 49 to 63 inches. Shipping weights range from 433 to 967 pounds.

BREVITY—Identify by IEN - 11437 If you write the maker

PAINTING . . Protective coating for surfaces subject to 2,500 deg F.

Source: TEMPIL CORP.
132 W. 22nd St., 3rd Floor, New York 11, N. Y.

Sample quart lists at $12

Pyromark trade names a new paint for application by brushing or spraying on metal surfaces subject to high temperature. It is recommended that the surface be sand blasted prior to the application to assure first adhesion and that initial temperature from 300 to 1,000 deg. F. be spread over 10 to 15 min. to give the fresh coat opportunity to vitrify gradually. The dried coating will not of itself scale off. It will retard but cannot prevent scale formation in metals subject to scaling at the high temperatures. Six colors include blue, black, gray, green, maroon, white. List is $40 per gallon.

BREVITY—Identify by IEN - 11438 If you write the maker

PROTECTING . . Slide window in aluminum frame for a welding hood

Source: ARGYLE MFG. CO.
101 Coal St., Colchester, Ill.

You blow it up

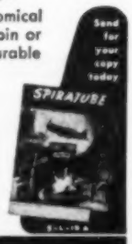
Quik-Lift trade names a new assembly of vertically sliding window and aluminum frame to apply on a welding hood. The window lifts its dark glass upward to permit clear vision through a protective glass when the hood operator blows into a mouthpiece positioned inside the hood. The window is moved back into operating position when the welder sucks in on the mouthpiece. List price is $17.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11439 If you write the maker

The Portable Pipeline to Profit and Savings

If it can ride on air, the best, most economical route for your materials—to box car, bin or production destination—is via light, durable and non-collapsible Spiratube. Its flexible, unobstructed passages convey maximum pay-load around corners, up and down, to hard-to-get-at places—and with minimum power-demand. Portable—it ideally fits into present systems. Sold through well-stocked distributors—Coast-to-Coast. Tried and approved by leading firms throughout the world.



Also Makers of
AYRTUBE
FLEXFLYTE
THERMATUBE
Literature Available
Write Dept. K-11

Sizes for all requirements

FLEXIBLE TUBING CORPORATION
MADE IN U.S.A.
SPIRATUBE
GUILFORD, CONNECTICUT, U.S.A.
Western Office { 416 CITIZENS BANK BLDG. PASADENA 1, CALIFORNIA

BREVITY—Identify by IEN - 11440 If you write the maker

BREVITY—Identify by IEN - 11441 If you write the maker

ELIMINATE WIRES

through use of

DU PONT CONDUCTIVE COATINGS

Easily and rapidly applied by spray, brush, dip, stencil to metals and non-conductors, they give a conductive surface of low resistance. One troy ounce covers about 3 sq. ft. Use them in printed circuits for radios, amplifiers, switchboards, meters; for capacitors and couplings; for static shielding to replace foils and cans; for resistors and solder seals. Save hours of time, $$$$ of cost! For more information, send for Bulletin CP-2-1247. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 11442 If you write the maker

CALL

Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

RYERSON

PRINCIPAL PRODUCTS:
Bars • Structurals • Plates • Sheets • Tubing
Allegheny Stainless • Alloy Steel
Inland 4-Way Safety Plate • Babbitt
Metal Working Machinery & Tools, etc.

FOR STEEL

JOSEPH T. RYERSON & SON, Inc.
Plants at New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

BREVITY—Identify by IEN - 11443 If you write the maker

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 11444 If you write the maker

steam circulation—UP

fuel costs—DOWN

with

DUNHAM VACUUM PUMPS

You get better results from fuel dollars with Dunham Vacuum Pumps. That's because they easily produce—*and maintain*—vacuums up to 26 inches . . . your guarantee of rapid steam circulation . . . shorter "heat up" periods.

Maintenance costs are negligible. There are no moving parts under vacuum. No close tolerance parts to get out of adjustment.

Dunham Pumps are easy to install; take up minimum floor space. For full information, WRITE FOR BULLETIN 1401-11.

DUNHAM

C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada:
C. A. Dunham Co. Ltd., Toronto
In England:
C. A. Dunham Co. Ltd., London

HEATING SYSTEMS AND EQUIPMENT

BREVITY—Identify by IEN - 11445 If you write the maker

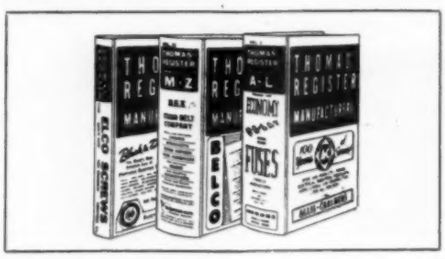
Simplify your problem of special parts production—write for this *New Bulletin*

CLEVELAND Top Quality FASTENERS

Send blue prints and specifications of your specially designed parts to
THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO

For Your Special Information

ALL MAKERS ARE LISTED IEN S-38



Many attempts have been made to go "editorially selective" in setting up headings for subjects in product directories. Every one has fallen short of accomplishing its purpose because no editor, or anyone else for that matter, is able to say what each product should be called or what principal purpose each one serves. The average directory user does not know this and simply assumes that any directory is incomplete when he picks his own designation and then cannot find it.

That is why Thomas' Register is preferred by so many plant and purchasing men. It is set up to list all products made in the United States by all of the names under which each is known. The sole editorial aim is to be complete and inclusive.

The 1952 edition is now being made ready for the press. It will be available shortly after the first of the year. We advise your reservation now if you want to make certain to receive a copy for your "where to buy it" information in the months ahead. Subscription is $15 plus handling charges.

FOR YOU TO LOOK THROUGH IEN S-39

Industrial Equipment News has come up through the years as a logical companion publication with Thomas' Register. It set out in 1933 to secure and publish information concerning the new products developed for industrial use among all that are listed in the Register. It has published descriptions of some 43,000 new products and is adding more each month.

These new products are assembled for you to look through with your own problems in mind. The approximate 800 advertised subjects are there also for your reference. We suggest that you turn the pages making notes of what you find. Then go back and note in more detail those you checked until you have a list of the ones on which you desire complete information. Use the subject index to make certain you have seen everything of interest to you.

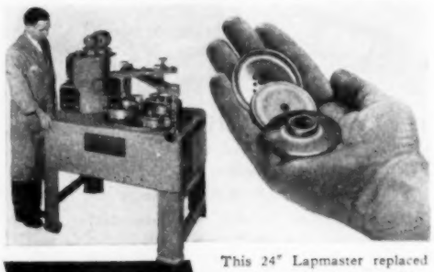
You can send us the list of identifying numbers and we will forward your inquiries to each manufacturer you have indicated or you can write to them direct using the addresses we have supplied. We hope you will thus solve all of your current problems. If you do not, however, tell us about the remaining ones so we will have the opportunity to make suggestions. The service is at your command without obligation. We will either answer your special inquiries with knowledge of previous experience in the subject or we will publish your request for help in the "I wish I had" column to ask all our readers.

EXPOSITION IEN S-40

November 26th opens the 23rd Exposition of the Chemical Industries in Grand Central Palace in New York City. Some 400 companies will exhibit equipment, materials, supplies, services. The exhibit continues until December 1st.

STEEL SCRAP IS NEEDED BADLY DIG IT OUT AND TURN IT IN!

BREVITY—Identify by IEN - 11446 If you write the maker



One LAPMASTER Replaces 2 Lapping Machines —Saves Over $700 Per Year

This 24" Lapmaster replaced two larger lapping machines. Maintenance, and operation savings effected, were sufficient to amortize the machine cost in one year's operation. Savings in compound alone amounted to over $700 yearly. Parts are 2" diameter sheet metal stampings.

Check These Lapping Production and Precision Features

With a Lapmaster you can lap dissimilar parts in one cycle, lap wide range of parts of different materials in short or moderate production, lap identical parts at tremendous production rates and maintain tolerances to one light band (.0000116"). Write for new catalog.

JOHN CRANE CRANE PACKING COMPANY
LAPMASTER DIVISION
1864 CUYLER AVENUE • CHICAGO 13, ILLINOIS

BREVITY—Identify by IEN - 11447 If you write the maker

ONE WASHER INSTEAD OF TWO WITH WEATHERSEAL!

The Weatherseal Washer combines a metal and a compressive, sealing washer, hydraulically bonded and "cured" together to provide just one piece to handle. The compressive material is composition rubber or neoprene, and it does a real job of sealing as this actual cutaway photo shows:

Note that the neoprene is extruded under compression to completely seal the outer edge of the metal washer as well as the fastener shank, through the metal sheets to the nut.

APPLICATIONS: Sheet metal roofing and siding • Auto body and chassis assembly • Sheet metal ductwork • Porcelain-to-metal assemblies.

TOPSEALS are fasteners you specify or supply—nail, bolt, sheet metal screw, etc.—assembled in our factory with Weatherseal Washers, ready for use. Reduce your inventory items with TOPSEAL! Write for sample and prices, stating your fastening or sealing problem. Proven production performance and large stocks maintained for quick shipment assures you of meeting your own production schedules.

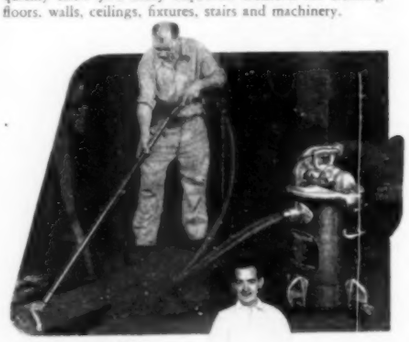
FABRICATED PRODUCTS COMPANY
WEST NEWTON, PA

BREVITY—Identify by IEN - 11448 If you write the maker

TORNADO® CLEANING

Saves YOU Time, Labor, Money

Modern plant maintenance demands modern equipment. Let Tornado speed up your cleaning time, reduce man hours and lower operator fatigue. The Breuer representative can quickly show you many improved methods for cleaning floors, walls, ceilings, fixtures, stairs and machinery.



TORNADO INDUSTRIAL VACUUM CLEANERS

Versatile and powerful machines for one stroke wet or dry positive pickup. Plenty of capacity for fewer emptying operations and attachments for every job. Bulletin 600.

For cleaning:

Floors, walls, ceilings, fixtures, stairs, machinery. Picks up dirt, dust, wood or metal chips, liquids or any combination.

TORNADO FLOOR MACHINES

A rugged and powerful machine that operates smoothly reducing operator fatigue. Self-retracting wheels and automatic brush coupler speed up operational time. Machines will scrub, polish, pumice, buff, wax, shampoo, steel wool and sand. Bulletin 585. For: Wooden and concrete floors, linoleum, asphalt or composition tile, carpets, and marble.

TORNADO PORTABLE BLOWER

A dependable blast of clean dry air that blows dirt, metal chips and oily fuzz out of electrical motors, machinery and other hard-to-get-at places. Attach a bag and hose and use it for a portable vacuum cleaner. Bulletin 579.

BREUER ELECTRIC MFG. CO.
5108 N. Ravenswood Avenue • Chicago 40, Illinois

BREVITY—Identify by IEN - 11450 if you write the maker

it's paper

. . . BUT IT KEEPS MOISTURE IN CAKE AND AWAY FROM BALL BEARINGS

Moisture can help the sale of cake . . . or ruin the sale of ball bearings. To control it, we have developed over 200 types of moisture-proof packaging papers . . . glassines . . . grease-proofs . . . waxed, printed, laminated, lacquered, polyethylene-coated . . . combined with films or foil . . . but always tailor-made to order.

Whether it's paper for moisture-control, or for any other special technical requirement, we believe we are unusually qualified to help you.

RIEGEL PAPER CORPORATION · 342 Madison Avenue, New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

BREVITY—Identify by IEN - 11451 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

. . . and the cost is especially low because it pays for itself many times . . . saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

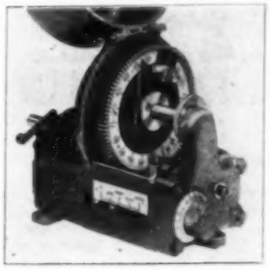
Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

BREVITY—Identify by IEN - 11453 if you write the maker

COUNTING . . Cycle repeater operates switch on predetermined count

Source: COUNTER & CONTROL CORP.
5223-27 W. Electric Ave., Milwaukee 14, Wis.



The company has added a number of new designs of its Cycle-Monitor, previously described IEN-239-47, for specific counting applications. All are based on the original units in which a count representing units, lengths, in terms of revolutions or strokes at the drive shaft is set up by adjusting a dial at a pointer to any number between 1 and 2,000 in standard arrangement.

Model CMSE was the first addition to Model CMR and Model CMS, respectively, for revolving and reciprocating drive, this new unit employing a solenoid to pick up the count electrically rather than mechanically. A further modification of this unit, known as Model CMSE-1, has been developed for use in conveyor control on stitching and taping machines in corrugated and fiber-board box factories. In this particular unit an additional switch and operating cam reduce the "on" time of the unit's main switch to a required minimum.

For batching work a control is available to alternately transfer from one contact to another, each contact being held for the full cycle count. This design is known as the Latching assembly. Further development resulted in the twin switch assembly with step-cut cams to operate two switches in staggered sequence in an automatic repeat-cycle basis. Also included in the line is a right-angle drive so input can be selected by the user on either the right or left-hand side. The company is prepared to apply its engineering service on special problems as specified.

In standard set-up the unit closes or opens a control circuit through a two-pole switch that forms part of the mechanism. This switch can be connected for alternate control between two circuits or to open or close a single circuit for an interval that is adjustable between a fraction of one stroke and a maximum of six strokes or revolutions of the unit's drive shaft. The switch rates 10 amp. on 110-volt ac. Overall standard dimensions are 9⅝ in. in length, 5¾ in. in greatest diameter, 7½ in. in height.

BREVITY—Identify by IEN - 11454 if you write the maker

TESTING . . Decade resistor, range between 10 ohms and 8.2 megohms

Source: ROCHESTER ELECTRONICS CO.
P. O. Box 227-A, Penfield, N. Y.

List price is $47.50

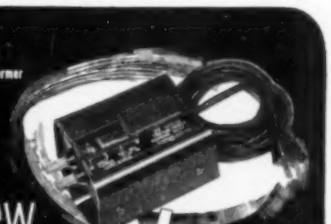
Rectangular housing measuring 7¼ by 4¼ by approximately 4 in. encloses an assembly of precision resistors in the company's new Model-2B decade resistor. The housing is provided with connection terminals at the front and with a sloping panel on which are two selector switches to set a desired range and select a value per decade in that range.

Maximum ratings are 2 watts in a range between 10 ohms and 82,000 ohms or 450 volts between 100,000 ohms and 8.2 megohms. The resistor employs RTMA standard values in the 10 per cent series.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

BREVITY—Identify by IEN - 11455 if you write the maker

Type 71-A VARIAC Transformer $10.50



a new Low-Voltage Variac

The new Type 71-A VARIAC Transformer is a very convenient source of low-voltage a.c., continuously adjustable from zero to 16 volts, open circuit. It is rated at 5 amperes at 13 volts output, continuous duty.

This new transformer is of the VARIAC type, with a completely isolated secondary winding. The slider track is calibrated in open-circuit voltage. The limited voltage range makes this transformer particularly safe for experimental work; the isolated secondary permits its use in floating circuits; the continuous adjustment is convenient in compensating for voltage fluctuation, or in determining performance over a variable voltage range.

The unit is 5½ inches long, 3¾ inches wide and 3¼ inches high. Its net weight is 4 pounds.

Write for a copy of the new VARIAC Bulletin. Just off the Press

GENERAL RADIO Company 275 Massachusetts Ave., Cambridge 39, Mass.
90 West St. NEW YORK 6 · 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

BREVITY—Identify by IEN - 11456 if you write the maker

LOW COST Electronic AIR FILTRATION

The Electro-PL is a unique dry-type, electronic air filter. Designed to provide intermediate air cleaning efficiency with maximum economy, it is now widely used for industrial, commercial and military installations. These total more than 5,000,000 cfm. The Electro-PL is dual-purpose . . . may be operated as either a dry-type air filter or with the electronic feature as seasonal conditions vary. Available in standard units for straight or "V" bank arrangements to meet almost any air volume requirements. For complete details write for Engineering Bulletin No. 257.

American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal, P. Q.

BREVITY—Identify by IEN - 11457 if you write the maker

KLIXON *Thermo-Snap* **Temperature Controls**

Klixon Thermo-Snap Temperature Controls are widely used in both military and commercial applications in products ranging from tanks and aircraft to radio and electronic equipment, sterilizers and household appliances.

Actuated by the snap-acting Spencer Disc, these controls open the circuit with a quick, clean break . . . close the circuit with fast solid make. Their accurate, sensitive operation is best able to withstand shocks, vibration, altitude or motion.

Klixon Thermo-Snap Controls are available in many types and ratings including hermetically sealed units. Our engineers will gladly help you with your temperature control problems. Write for their help and information, today.

KLIXON SPENCER THERMOSTAT
Division of Metals & Controls Corp.
210 Forest St., Attleboro, Mass.

BREVITY—Identify by IEN - 11458 if you write the maker

THE RIGHT ROOF EVERY TIME!

That's what Ruberoid's Built-Up Roof Specification Book provides. No matter what your roofing problem may be, the right specification is always at your fingertips with this comprehensive file. Whether it's the special treatment required for a Water-Cooled roof or Parking Space roof, a question about the choice of base felts, or the latest in flashing details for low parapet walls, you'll find the right answer every time clearly presented in Ruberoid's Built-Up Roof Specification Book. Doubly indexed and tabbed, it is a reference you will use time and time again. A note on your letterhead will bring your free copy to you promptly.

MORE YEARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

The RUBEROID Co.

Executive Offices: 500 Fifth Avenue, New York 18, N. Y.
Sales Offices: Baltimore, Md. • Bound Brook, N. J. • Chicago, Ill. • Dallas, Texas • Erie, Penn. • Minneapolis, Minn. • Moline, Minn. • Mobile, Ala.

BREVITY—Identify by IEN - 11459 If you write the maker

Pump Materials DIRECT From Original Containers!

Alemite Versatal Equipment allows fast, easy handling of liquids and semi-solids... from paint to putty.

- Air-operated *Versatal* Pumps dispense materials directly from original bulk drums!
- Hydraulic pressures deliver materials through as much as 1000 feet of hose or pipe!

FREE - a book of ideas on how Alemite *Versatal* Equipment can help solve your material handling problems. Address your request to Alemite, Dept K-111, 1850 Diversey Parkway, Chicago 14, Ill.

ALEMITE Versatal

Another Product of Stewart-Warner

BREVITY—Identify by IEN - 11460 If you write the maker

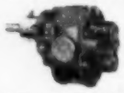
Custom-Built PUMPS for Special Jobs

Your problem of getting a special pump may be solved easily if you put it up to Brown & Sharpe. Wide experience in designing pumps for many special purposes in many different fields of industry enables Brown & Sharpe to solve special pump problems quickly, often at worth-while savings. Send specifications for recommendations. Brown & Sharpe Mfg. Co., Providence 1, R. I.

We urge buying through the Distributor

GEARED VANE
CENTRIFUGAL
MOTOR DRIVEN

Flange Mounted Rotary Geared Pump readily adapted to many machines.



Flange Mounted Rotary Geared Pump with Multiple Pipe Connections.

Duplex Unit can be arranged to pump dissimilar liquids.

BROWN & SHARPE

BREVITY—Identify by IEN - 11461 If you write the maker

SAVE MONEY ON WIRE ROPE OR CHAIN FITTINGS

When looking for a fitting, you can save both time and money by checking the Laughlin Data Book first. Many fittings you've had made up as "specials" you'll probably find as Laughlin standard items.

FREE! This valuable catalog gives you information on wire rope and chain fittings plus helpful tables and other data. It's yours for the asking.

LAUGHLIN

THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

MAIL THIS TODAY ... no cost or obligation

THE THOMAS LAUGHLIN CO.
111 Fore St., Portland 6, Maine

Please send Catalog-Data Book #150 to:

Name ..... Position .....
Company .....
Street .....
City ..... Zone ... State .....

BREVITY—Identify by IEN - 11462 If you write the maker

CONDUCTOR . . Electric cable for control circuits, moisture resistant

Source: GENERAL ELECTRIC CO.
1283-87 Boston Ave., Bridgeport 2, Conn.

Wick action is eliminated

Fiberglas cloth is split into tape and wound around the conductors as they are stranded in this new multiple-conductor cable. The cloth holds the conductors in correct relative position under the outer jacket and permits jacketing compound to be extruded through the open spaces. The tape becomes a part of the jacket and acts as a matrix to assist in removal of the jacket and filler for splicing and terminating.

Versatol-Geoprene is available in sizes No. 19/25 and No. 19/22 in 1 to 12 conductors. It is suited for use where current-carrying requirements are 15 amp. with a resistance of 1.8 ohms per 1,000 ft., or 25 amp. with a resistance of 0.86 ohm per 1,000 feet. Installation can be made in the open air, in a duct or conduit, or buried in the earth.

BREVITY—Identify by IEN - 11463 If you write the maker

TIMING . . Hour glass design for 3 minute interval, molded in Lucite

Source: TIME-IT CORP.
Highway 25-A, Stony Brook, N. Y.

Transparent Lucite protects the 3-min. "hour glass" in this new interval unit. The Lucite is integral with a black, red, blue, or yellow housing that measures 3½ in. in overall height by ¾ in. in width and ⅝ in. in depth. The timer is accurate within plus or minus 5 seconds for the interval. List price is $1.

Similar units are available for 1-min. interval within plus or minus 2 seconds. The company is also prepared to accept orders for special intervals within the 3-min. maximum using its stock molds and to manufacture timers with ranges from 3 to 15 min. to specification. The unit can be dropped without danger of breaking it. The hour glass remains in permanent molded-in position.

BREVITY—Identify by IEN - 11464 If you write the maker

METERS . . Technical paper reprint on company's thermal-type air velocity meter

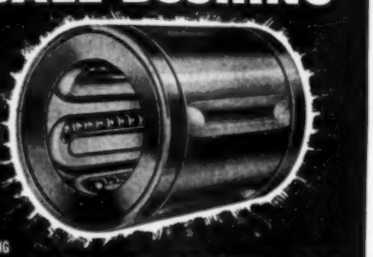
Hastings Instrument Co.
P. O. Box 1275-A, Hampton 10, Va.

Operating principle, probe design, response, calibration and applications are described in detail by new 12-page reprint of a technical paper on the company's Air-Meter. Title is "A Compensated Thermal Anemometer and Flowmeter". The company will be happy to send you a copy upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11465 If you write the maker

BALL BUSHING



The BALL BEARING for your **LINEAR MOTIONS**

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A BALL BUSHINGS.

And new hundreds of original equipment manufacturers use the low cost Commercial Series B BALL BUSHINGS which were developed for support of linear motions in competitively priced, volume manufactured products where super precision is not essential.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and engineering with BALL BUSHINGS!

LOW FRICTION • LONG LIFE
ELIMINATES BINDING and CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LASTING ALIGNMENT • LOW MAINTENANCE

New manufactured for ½", ⅝", ¾", 1" and 1½" shaft diameters.

Write for descriptive literature and the name of our representative in your city.

THOMSON INDUSTRIES, INC. Dept. J
MANHASSET, NEW YORK

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

BREVITY—Identify by IEN - 11466 If you write the maker

The Colson Universal Drum Truck for fast, safe handling of drums and barrels

One man, with the COLSON universal drum truck, easily does the work of two. It locks any size container, lifts it easily and carries it with the weight evenly balanced over the wheels.

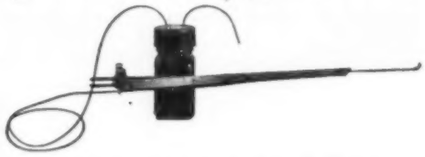
Other work-saving COLSON equipment: hand trucks, platform trucks, Lift-Jack systems, wheels and casters to meet every application. Write us or consult your phone book for the COLSON office near you.

Write Today for Free 56 Page Catalog.

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • LIFT-JACKS • INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 11467 If you write the maker

ARCCO NEVER-DRY PEN Writes for Months



REPLACES OTHER MAKES • USES REGULAR INKS

Regardless of pulsations or other causes of ink failures this new Never-Dry Pen will make clean and complete records. Ink supply lasts for several months without refilling reservoir. Capillary tube from ink bottle placed in instrument case feeds pen with continuous flow. Closed system sealed from atmosphere prevents clogging and dirt accumulation.

Weight of pen is constant at all times thus insuring extreme accuracy. No slopping or dripping. Stainless steel construction—no corrosion. When ordering, specify make and type of recording instrument.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

$6.00 each Net
Send for quantity prices

BREVITY—Identify by IEN - 11468 If you write the maker

ACEC

Integral Horsepower Electric Motors ¾-200 hp.

NOW AVAILABLE from STOCK in NEW YORK, CHICAGO, KANSAS CITY, NEW ORLEANS, DALLAS and LOS ANGELES Warehouses

Strictly conform to NEMA FRAMES AND SPECIFICATIONS. On hand now, 1-phase and 3-phase: Open Drip Proof Motors, Totally Enclosed Fan Cooled Motors, 4 types of Pump Motors, and Adjustable Speed Schrage Motors. All ACEC motors fully guaranteed. Service available from 232 distributors and service shops. Write, wire, or telephone your requirements.

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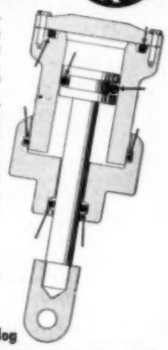
One E. 53rd St., New York 22, N.Y. Plaza 8-3105
Sole Representatives of
ATELIERS de CONSTRUCTIONS ELECTRIQUES de CHARLEROI
Branches and Representatives in Principal Cities

BREVITY—Identify by IEN - 11469 if you write the maker

O-RINGS by INJECTION MOLDING

Dependable Hydraulic Seals



Minnesota O-Rings function in air or gas systems as well as in hydraulic systems. Air cylinders . . . hydraulic valves . . . hoisting mechanisms . . . water pumps . . . bottling machines . . . refrigerators . . . motors . . . lubricators . . . are a few of their uses. Minnesota's exclusive injection process makes possible very close dimensions, uniformity in mass production and downright economy. We use special compounds of synthetic rubber to meet your exact requirements. Let us quote on your next hydraulic packing installation.

Manufacturers of all types of small rubber parts

Write for O-Ring Catalog

MINNESOTA RUBBER & GASKET CO.
3640 WOODDALE AVE., MINNEAPOLIS 16, MINN.

BREVITY—Identify by IEN - 11470 if you write the maker

Amazing ALEMITE OIL-MIST

AUTOMATIC LUBRICATION SYSTEM

Revolutionizes Machinery Lubrication

Unbelievably simple system atomizes oil into mist, distributes it through tubing to bearings. Bathes all bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on all sliding, rubbing, rolling parts regardless of variations in load, temperature or speed! No "peaks and valleys" of lubrication.

Fully automatic—eliminates waste and the uncertainties of the "human element." Extends bearing life as much as 17½ times. Seals bearings against dirt and abrasives. Cuts oil consumption as much as 90%. Greatly reduces the number of oils needed.

Desk-Top Demonstration, No obligation

A note on your Company letterhead will bring a trained Alemite Lubrication Representative to your offices. In a brief yet thorough Desk Top Demonstration, he will tell you how Alemite Oil Mist can provide more positive lubrication at lower cost than you ever thought possible. Write Alemite Division of Stewart-Warner, Dept. K-111, 1850 Diversey Parkway, Chicago 14, Illinois

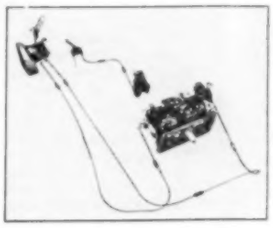
Stewart-Warner STEWART WARNER

Alemite OIL-MIST Automatic Lubrication System

BREVITY—Identify by IEN - 11472 if you write the maker

CONTROL . . Push-pull assembly for remote positioning action

Source: TELEFLEX INC.
244 W. Wingohocking St., Philadelphia 40, Pa.



The company announces improved design in its cable-and-conduit push-pull control equipment. It is prepared to supply flexible conduit, the helix-wound steel cable that operates axially in this conduit and various designs of operating units to assemble at remote positions. One of these units is a crank with a sprocket that engages the helix on the cable for unlimited movement in either direction. Another is a limited-movement lever assembly. All are designed for light control action in installations where it is necessary to go around obstructions between the actuating point and the controlled mechanism. Three sizes are included in the line in plain and locking-type design.

BREVITY—Identify by IEN - 11473 if you write the maker

HARD FACING . . Gas welding rod for equipment parts subject to wear

Source: WALL COLMONOY CORP.
19343-47 John R St., Detroit 3, Mich.

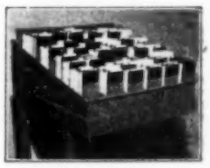
Weldability is excellent

Wallex trade names a new welding rod to melt and deposit under an oxy-acetylene flame. It imparts abrasion resistance with good impact and corrosion-resisting properties. The rod contains chromium, molybdenum, manganese, silicon, carbon and iron. Hardness is 57 to 61 on the Rockwell C scale. Melting point is 2,375 deg. F. Three diameters are 3/16, ¼ and 7/32 inch. Length is 8 to 12 inches.

BREVITY—Identify by IEN - 11474 if you write the maker

RECORD KEEPING . . Table type file holds 20,000 cards in section steps

Source: STEP-O-FLEX CO.
612-18 S. Plymouth Court, Chicago 5, Ill.



Each card stands ready

A steel table measuring 24 by about 26 by 36 in. holds two steel trays having inclined inner bases in this new file. The trays take section steps with interlocking tongued gliders that can be slid forward and back with relation to each other. The steps, also made of steel, total 5 in each of three rows in each tray for a total of 6 in width and 5 in depth for a maximum of 20,000 cards. Dividers made of press board are provided with laminated transparent tops to take two-line heading inserts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11475 if you write the maker

LOW COST PROTECTION FOR MAN AND MACHINE

ELASTICONE®

GUIDE PIN COVERS

JUST SNAP INTO PLACE

NO TOOLS REQUIRED

NO INSTALLATION COSTS

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering.

Protects Pins and Bushings from nicks, scratches . . . prevents injuries to Die Setters & Operators. Write for full information.

CENTRAL SAFETY EQUIPMENT COMPANY
2200 E. HUNTINGDON STREET, PHILADELPHIA 25, PA.

BREVITY—Identify by IEN - 11476 if you write the maker

Jacketed Pumps

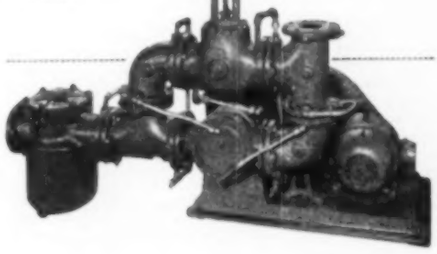
for handling viscous materials

Pumps for H & B Jacketed Systems are made especially for us to fit the flanges of H & B jacketed fittings. These pumps are engineered to provide maximum efficiency in handling viscous materials. H & B fittings are designed with a double wall forming an all-over jacket, completely insulating the interior line, with no dead spots or unprotected places.

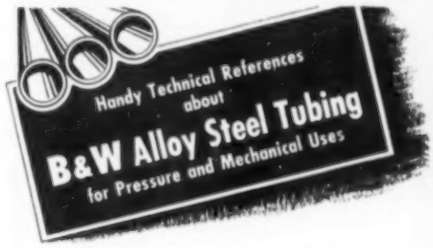
HETHERINGTON & BERNER INC.
725 Kentucky Ave. Indianapolis 7, Ind.

H & B jacketed pump with relief valve by-pass and strainer.

Send for new Bulletin J-50.



BREVITY—Identify by IEN - 11477 if you write the maker



Check — Clip — Mail
this listing for free copies

- TB-129 — Condensed Technical Data on B&W Alloy Tubes and Pipe for High Temperature Services.
- TDC-119D — Combined Standard Steel Lists of AISI and SAE.
- TDC-136 — Chemical Compositions of Low and Intermediate Alloy Steel Tubes (B&W Croloys ½ to 9).
- TDC-141 — B&W Alloy Steel Tubing — medium carbon grades — for mechanical uses.
- TA-1559 — B&W Steel Tubing for Process Industries.
- TB-329 — B&W Heat Exchanger & Condenser Tubes

(TA-16445)

THE BABCOCK & WILCOX TUBE COMPANY
Executive Offices: Beaver Falls, Pa. General Offices & Plants: Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Tubing. Alliance, Ohio—Welded Carbon Steel Tubing

BREVITY—Identify by IEN - 11478 if you write the maker

NO MENTAL HAZARD with the P&W KELLERFLEX CARBIDE

DI-BUR TRADE MARK

FORGET SLIVERS! DI-BUR eliminates sliver condition by removing steel in small granules, kind to operators' hands.

FORGET BREAKAGE AT BRAZE! Special brazing application places "shock absorber" between Carbide and steel Shank.

FORGET HIGH SPEEDS! DI-BURS run at half the speeds usually recommended for carbide burs.

FORGET LACK OF CONTROL! DI-BUR stays where you want it instead of walking away from work.

FORGET FATIGUE! DI-BURS are so easy to control, operators work as well at end of day as at the beginning.

Order from stock direct from P&W Branch Office near you. Birmingham* • Boston Chicago • Cincinnati Cleveland • Dallas (The Stance Co.) • Detroit Houston (The Stance Co.) Los Angeles • New York Philadelphia • Pittsburgh Rochester • St. Louis San Francisco. Also from Factory Stock at West Hartford, Conn. *Office only.

PRATT & WHITNEY
DIVISION, WILLEY-SAVAGE TOOL COMPANY
WEST HARTFORD 3, CONNECTICUT, U.S.A.
Distributed by Jobbers for 10 years

BREVITY—Identify by IEN - 11479 if you write the maker

Because they wear longer...stand up better to the destructive effects of heat, abrasion, corrosion and chemical action, Wissco Metal Processing Belts have become the accepted standard for varied applications involving processing and heat treating.

They're your assurance of uninterrupted trouble-free production at a time when stoppages cannot be tolerated.

For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CFI

BREVITY—Identify by IEN - 11480 if you write the maker

how badly they needed a Fairbanks-Morse Generating Set!

Why gamble with power failure? Install a Fairbanks-Morse Generating Set. It provides peace of mind, and protects the lives and welfare of persons on your premises. Fairbanks-Morse offers generating sets to meet every requirement. See your local Fairbanks-Morse dealer today or write Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE,
a name worth remembering

BREVITY—Identify by IEN - 11481 if you write the maker

USE THEM FOR...

1. Machining
2. Assembling
3. Packaging
4. Sorting

VERSATILITY. Basic hoppers can be tooled for a wide variety of pieces.

LARGE CAPACITY. Up to 2.4 cu. ft. on 32" tumble type. Eliminates frequent reloading and saves labor.

Send samples with delivery rate and orientation requirements to:

KRAUS DESIGN INC.
948 EXCHANGE ST. • ROCHESTER 8, N.Y.

BREVITY—Identify by IEN - 11482 if you write the maker

THREADING . . Set of taps, dies and holders in plastic case and tray

Source: HENRY L. HANSON CO.
26 Union St., Worcester 8, Mass.

New assembly of the company's set of taps, dies, die stock, tap-and-reamer wrench, tap wrench, screw-pitch gage and a screwdriver is in a carrying case molded in flexible Bakelite polyethylene plastic. The case is resistant to abrasion, moisture, oil, grease and most chemicals. It is 5 lb. lighter and 50 per cent smaller than the previous wood case.

It holds 39 pieces in the complete set, each piece in a compartment in either the base or the removable tray. Molded into the hinged cover is a tabulation of the correct drill to use for given size of tap. The company is prepared to supply nine assortments of the tools containing 14 to 39 items each in a list price ranging from $13.25 to about $25.

BREVITY—Identify by IEN - 11483 if you write the maker

MOTOR CONTROL . . Magnetic starter rates to 10 hp., 550 volt, 3 phase ac.

Source: FURNAS ELECTRIC CO.
1008 McKee St., Batavia, Ill.

Series YE is new addition to the company's line of magnetic motor controls, previously described IEN-2558-51. It falls between No. 1 and No. 2 standard sizes. Overall dimension are 6¼ by 4¼ by 10¾.

Assembly includes renewable rectangular-type contacts made of silver and designed for arc quenching and low contact resistance. The terminal board is made of arc-resistant alkyd plastic and is equipped with pressure connectors. Start and stop control with thermal overload protection are provided for single and polyphase squirrel-cage motors and for primary controls of wound rotor motors with secondary control.

BREVITY—Identify by IEN - 11484 if you write the maker

POWDER METAL PARTS . . Proceedings of meeting by the Association reported in 86-page booklet form

Metal Powder Association
420 Lexington Ave., New York 17, N. Y.

April 1951 meeting of the Association is reported in new booklet, "Proceedings of Seventh Annual Meeting", available at a list price of $2.50. It reprints the technical papers presented on topics such as metal powders in small arms ammunition, metal powder applications in home appliances.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11485 if you write the maker

BREVITY—Identify by IEN - 11486 if you write the maker

SEAMLESS
F.O.S. Industrial Tape

The original pressure-sensitive tape made in hundreds of widths, weights, constructions for a host of time-saving applications.

● Take a quick glance at the operations in which pressure-sensitive tape techniques are saving time and money. Seamless F.O.S. Tape is strong, tenacious, easy to apply, yet easy to remove. Special construction to resist staining, high temperature, moisture, corrosion and other severe conditions. Write for prices, free samples, authoritative advice and suggestions.

Do you have a defense contract requiring tape to meet government specifications? We can help you. Wire details collect for 24-hour reply.

OTHER USES

MASKING • SOUND-PROOFING • HOLDING
PACKAGING • BACKING • HINGING
PROTECTING • REINFORCING • IDENTIFYING
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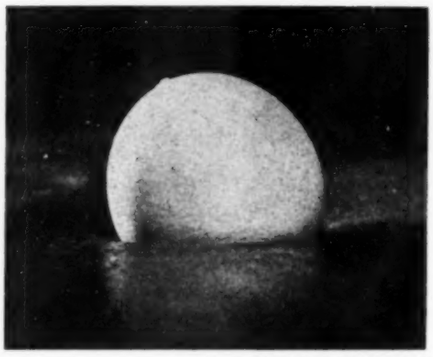
INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.

BREVITY—Identify by IEN - 11487 if you write the maker



Unretouched photograph taken at the moment of impact by micro-flash process.

Eggs bounce off "SHOCK-ABSORBING" RUBATEX without breaking!

Dropped from a height of more than one hundred feet and traveling at over sixty miles an hour, this egg bounced off a three-inch-thick RUBATEX closed cellular rubber pad without breaking.

The ability of RUBATEX to literally smother impact is due to a dense structure of tiny balloon-like chambers, each retaining inert nitrogen under pressure. Each chamber is completely sealed from the others by a wall of live rubber, forming an amazingly resilient cushion which rapidly dissipates the hardest blows.

If you have a gasketing, sealing, shock-absorbing, or vibration damping application—or perhaps a critical packing problem—you will find RUBATEX possesses characteristics ideal for your purpose. RUBATEX cannot absorb moisture. It has high insulating value—is resistant to oxidation and is rot and vermin proof. It has good compressive strength—is resilient, light in weight, and buoyant.

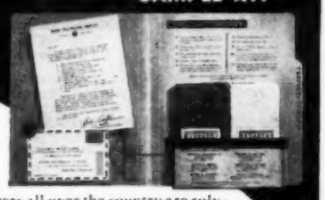
For further information, write for Catalog RBS-12-49, Great American Industries, Inc., RUBATEX DIVISION, BEDFORD, VIRGINIA.

Photo-micrograph of RUBATEX closed cellular rubber shows the tiny, individually sealed balloon-like chambers which retain inert nitrogen under pressure.

RUBATEX CLOSED CELL RUBBER
For Gasketing • Cushioning • Shock Absorbing • Vibration Damping

BREVITY—Identify by IEN - 11489 If you write the maker

THERE'S NEWS FOR YOU IN THIS TUFFLEX SAMPLE KIT



Manufacturers all over the country are solving design problems, simplifying production, achieving new economies, increasing salability—with TUFFLEX, the remarkable fiber felt. There's practically no end to TUFFLEX versatility. It cushions. It protects. It absorbs sound—dampens vibration. It insulates. It die cuts with firm, true edges. New applications are turning up constantly. Perhaps TUFFLEX can solve a problem for *you*. Send now for free sample kit, containing TUFFLEX samples and giving specifications! Wood Conversion Company, Dept. 126-111, First National Bank Bldg., St. Paul 1, Minnesota.

WOOD CONVERSION COMPANY

BREVITY—Identify by IEN - 11424 If you write the maker

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1 MORE CAPACITY—for its weight, size and price.
2 SELF-PRIMING—starts instantly with high suction lift.
3 ONE MOVING PART—tough, long-lived.
4 GEARLESS—impeller outlasts metal gears.
5 TROUBLE FREE—simple construction.
6 ECONOMICAL—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

BREVITY—Identify by IEN - 11491 If you write the maker

The New Hoffman ELECTRONIC SAFETY GUARD gives you

INCREASED PRODUCTION
LOW MAINTENANCE COST
NO OPERATOR FATIGUE
NO ACCIDENT TIME-LOSS

New Electronically Controlled SAFETY and BARRIER GATE GUARD brings benefits to both management and workers

YOU can increase your plant power press production immediately with installation of the Hoffman Safety and Barrier Gate Guard. It gives the operator greater assurance, eliminates fatigue and accident time-loss. It will give higher and smoother production per man hour.

The Hoffman Guard is an electronically controlled guard consisting of four major parts—Light Source and Photo Cell Assembly — Amplifier — Magnetic Treadle Control — Non-Repeat Micro Switch. The Barrier Gate Guard is an auxiliary unit and is used as a double safety precaution.

HOFFMAN ENGINEERING CORP.
Department 4-1 • Anoka, Minnesota
Please send free details about the Hoffman Electronic Safety Guard.
Name
Address
City State

HOFFMAN ENGINEERING CORPORATION
ANOKA, MINNESOTA
Electronic Controls for Industry

BREVITY—Identify by IEN - 11492 If you write the maker

THREADING . . Horizontal machine threads 47 holes in engine block

Source: NATIONAL AUTOMATIC TOOL CO.
49 National St., Richmond, Ind.

Hydraulic feed is provided to each of the opposed horizontal heads in this new machine. The two operate toward each other on bed ways to thread 47 holes in an engine cylinder block secured in a central fixture. Production is at the rate of 2 cylinder blocks per hour. The threads range from ⅛-in. pipe tap to ¾-in. pipe tap and include several measuring ⅜ in. 16 and ½ in. 13-thread machine tap.

BREVITY—Identify by IEN - 11493 If you write the maker

CLEANING . . Hand cream for use on worker's hands and arms

Source: OTTAWA ENGINEERING & SALES CO.
14162-66 Ironwood Drive, Marne, Mich.

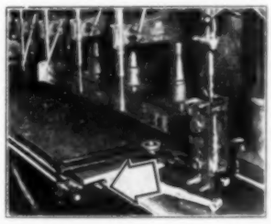
Requires only a water rinse

Craftsmen is a new hand cream packaged in 8-oz. jars, 1 and 5-gal. cans and in 55-gal. drums for application on a worker's hands and arms prior to starting a shift. The material works into the skin quickly to leave the surface clean and smooth. It prevents subsequent penetration of grease, oil, paint, lacquer, varnish, ink so the worker has no difficulty in removing any of them at the end of a shift.

BREVITY—Identify by IEN - 11494 If you write the maker

DRILLING . . Parallel arm fixture positions and holds work under spindle

Source: TORKARM CORP.
2910-14 Emerson Ave. S., Minneapolis 8, Minn.



Torkrail trade names a new design of the company's Torkarm holding fixture for a drilling machine, previously described IEN-2904-50. The new rail acts as the anchoring track for the fixture and permits sliding it along the table of a gang drilling machine to bring the work progressively under the various spindles. The fixture permits the work to float but prevents it from rotating. Two sizes of the Torkrail are available for average and for heavy-duty work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11495 If you write the maker

THREAD PIPE *faster!* Cut Costs with TOLEDO

Toledo No. 11 Ratchet Threader, ½" to 1¼" pipe.

Toledo No. 999 2" Power Pipe Machine, wheel or knife cut-off.

Speed the work—beat high costs—with genuine TOLEDO Pipe Tools and Power Pipe Machines! Designed for *easy handling, faster cutting* . . . complete range of capacities. Hand Tools, all pipe sizes, ⅛" to 12" and ¼" to 1" bolts. Power pipe machines, up to 2" and 4" capacity. Time-proven dependability. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, O.

RELY ON THE LEADER TOLEDO

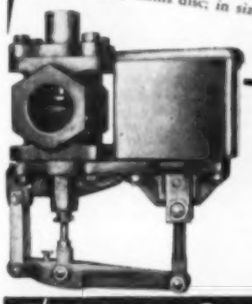
PIPE TOOLS . . . POWER PIPE MACHINES . . . POWER DRIVES

BREVITY—Identify by IEN - 11496 If you write the maker

JOHNSON Direct Acting Solenoid Valve — for 150 lbs. Differential Pressure . . .

You *can* get a solenoid valve that operates under differential pressures up to 150 lbs., temperatures to 400°F., *without pilot valves*. It ends the time lag and wiredrawing that come with slow opening—the danger of sticking that comes with auxiliary pistons. It offers unusual possibilities for all types of automatic, or remote, flow control. Johnson Solenoid Valves are available for normally closed or normally open service; with stainless steel valve and seat or Jenkins disc; in sizes from ½" to 3".

Write for Bulletin "V"



WHERE CAN YOU USE THIS AUTOMATIC VALVE?

- No pilot valves
- Temperatures to 400°F.
- Differential Pressures to 150 lbs.
- Immediate full flow
- Heavy duty construction

The Johnson Corporation
846 WOOD ST. THREE RIVERS, MICHIGAN

BREVITY—Identify by IEN - 11497 If you write the maker

CHICAGO Internal Grinding WHEELS

Rapid Delivery

MANUFACTURED TO ORDER

Chicago Internal Grinding Wheels produce better finishes with longer wheel life and cutting action. They're your best buy—"tailor made" to your specifications and speedily delivered.

Advanced production methods assure you perfectly balanced Internal Wheels to meet rigid finishing requirements. Faster delivery . . . with overnight service for special jobs.

WRITE TODAY for full details on all Chicago Wheel products . . . and *free* sample Chicago Internal Grinding Wheel.

CHICAGO WHEEL & MFG. CO.
Dept. N, 1101 West Monroe St.
Chicago 7, Illinois

BREVITY—Identify by IEN - 11498 If you write the maker

Assure a Free-Cutting Wheel IN GRINDING OPERATIONS WITH Delpark COOLANT FILTERS

Attrition in grinding operations is reduced to a minimum by Delpark Full-Flowing, Self-Cleaning Coolant Filters. Complete and continuous filtration of the coolant as it comes from the work removes heat bearing solids, prevents loading of the wheel. A free-cutting wheel assures greater accuracy, speeds production with less wheel dressing, longer wheel life. Two to several hundred gallons per minute capacities.

- Fully automatic • No down time for cleaning reservoir • Extends coolant life • Uniform coolant temperature

Delpark INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

Write for more complete information

INDUSTRIAL FILTRATION COMPANY
5111 Industrial Avenue • Lebanon, Indiana

BREVITY—Identify by IEN - 11499 If you write the maker

GOLD SEAL TAPE GOES FURTHER...

Here's why... Guaranteed Footage — you get full measure in every roll. No Waste — Gold Seal tears evenly, wraps smoothly, conforms closely to uneven surfaces. High Dielectric Strength — less footage is needed per job. Lasting Tack — Gold Seal sticks to the job (in cold or moisture). Doubly Protected — each roll is cellophane-wrapped and packaged to reach you factory-fresh!

Ask for Gold Seal — the best buy in tape. Jenkins Bros., (Rubber Division), 100 Park Ave., New York 17.

◀ Single Rolls or 10-Roll Containers

JENKINS Gold Seal Tapes FRICTION...RUBBER

MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

BREVITY—Identify by IEN - 11500 If you write the maker

Say "CHESTER" FOR DEPENDABLE CHAIN HOISTS!

...particularly when you need "Specials" fast!

In addition to a standard line of Spur Gear and Differential Hoists — from ¼ to 25 tons — we can give fast service on Extended Hand Wheel types, Low Head Room Trolley Hoists, or other "Specials".

Send us your specifications. Or write for our complete catalog.

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

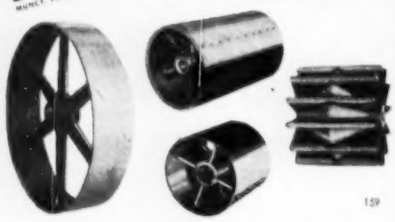
IEN-2

BREVITY—Identify by IEN - 11501 If you write the maker

SPROUT WALDRON MUNCY, PENNSYLVANIA

PULLEYS

SOLID FACE and BELT SAVER



159

In handling rough, abrasive materials, S/W exclusive Belt Saver Pulleys are lengthening belt life as much as 400%. Equally well recognized is the S/W Blue Face Pulley Line in standard and made-to-order types and sizes. Write today for literature. Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

BREVITY—Identify by IEN - 11502 If you write the maker

TIMING . . Hydraulic relay delays operation of circuit contacts

Source: HEINEMANN ELECTRIC CO.
313 Plum St., Trenton 2, N. J.

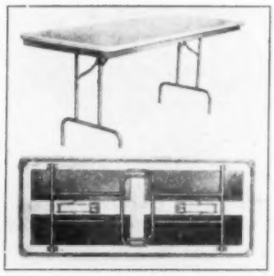
Silic-O-Netic is a new hydraulically-controlled time-delay relay available in delay intervals maximum to 4 minutes. Contacts rate 10 amp. at 110-volt ac. Overall dimensions are 1⅝ by 2½ by ¾ inches.

A sealed tube extends down through the relay coil to contain a movable iron core. Space between core and tube is filled with a viscosity-stable silicone liquid. When the coil is energized the movable core is drawn up into the magnetic field at a rate of rise controlled by resistance to movement offered by the liquid. The relay operates on increased magnetic flux which results as the core reaches the pole piece at the top of the tube.

BREVITY—Identify by IEN - 11503 If you write the maker

FURNITURE . . Folding table stacks flat, presents smooth surface

Source: MIDWEST FOLDING PRODUCTS
951 Industrial Ave., Dept. 1, Roselle, Ill.



DuHoney-20 trade names leg

Pedestal legs made of 1-in. steel tube with chromium glides are hinged beneath the top of this new table. They are positioned to provide foot and leg room for individuals seated at the sides and ends. The legs lock in folded or open position. They nest to lie flat within the recessed steel apron, secured to the bottom surface, so the folded unit can be stacked flat. Twelve occupy a space 30 in. in height. Widths are 30 and 36 inches. Lengths are 60, 72 and 96 in. in the former case, 72 and 96 in. in the latter case. Height is 29½ inches.

BREVITY—Identify by IEN - 11504 If you write the maker

CUTTING . . Technical article reprint on centerless turning of bars, billets and tubes

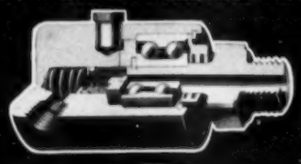
Medart Co.
102 Potomac St., St. Louis 18, Mo.

Walter Siegerist, company's President, is author of an article in the technical literature now offered as a 12-page reprint bulletin. Title is "Centerless Turning of Bars, Billets and Tubes". It describes machines for the purpose, their operation, diameter tolerance, coolants, bar peeling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11505 If you write the maker

FAWICK ROTORSEAL PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX CO., INC.
9919 CLINTON ROAD • CLEVELAND 11, OHIO

For complete information on a FAWICK ROTORSEAL to suit your specific application, write to the Home Office, Cleveland, Ohio.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

BREVITY—Identify by IEN - 11506 If you write the maker

Uniform, Clean, Heat from Glass Plates!

RA-GRID HEATER PLATE

9 sizes: ranging from 6 x 14" to 16 x 28"
Thickness: ¼" Heat: Up to 300° F.
Voltage: 230 max. for 16 x 24" plates
Connections: Two terminals for connection of wires

CROSS SECTION

Here is pure, uniform electrical heat — radiated from a pane of glass!

Smokeless, dustless, flameless radiant heat from a paper-thin aluminum grid fused to the back of a strong, tempered glass panel. Think of the places in your production process — in your *product itself* — where heating or drying can be done faster, easier, safer, cheaper with this remarkable new unit. Want to know more? Send today for our technical folder. Write to Dept. 1EN-11.

RA-GRID HEATER PLATES

BLUE RIDGE GLASS CORPORATION • KINGSPORT, TENN.

BREVITY—Identify by IEN - 11507 If you write the maker

a nickel a 'blow'

SHAWMUT t-d RENEWABLE LINKS COST AS LITTLE AS 5¢ TO REPLACE

Save with Shawmut t-d RENEWABLES

Both Knife-Blade and Ferrule Types for 250 and 600 volt circuits, from 0 to 600 Amps.

MAXIMUM PROTECTION WITH MAXIMUM TIME DELAY

The Shawmut "t-d" link gives both maximum time delay in the higher current ranges — and maximum protection in the overload zone. On short circuit, operation is *instantaneous* — the notches of the t-d link blow one after the other with action like a 4-step rheostat, limiting the voltage rise.

t-d FUSES & t-d LINKS

All Shawmut t-d fuses are renewable and have completely interchangeable links and parts. Knife-blade type from 70 to 600 Amps for either 250V or 600V circuits. Ferrule types from 0 to 60 Amps.

ORDER NOW OR SEND FOR SHAWMUT t-d BULLETIN 500

t-d — Made At The Switch

THE CHASE-SHAWMUT CO.
386 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

BREVITY—Identify by IEN - 11508 If you write the maker

Here's JOB SAFETY at any height! plus REAL ECONOMY!

for Painting and Overhead Work
BIL-JAX MAINTENANCE TRESTLES

Cut time and labor costs with these sturdy, all-steel trestle units. Many height variations possible, from one foot up. Ball bearing casters (locking type) make unit easy to maneuver. Patented. Underwriters' approved.

BILJAX ARCHBOLD • OHIO

Available on sale or rental basis. Write for catalog L-11.

BREVITY—Identify by IEN - 11509 If you write the maker

Sure! Maintenance Men are HARD TO GET . . .

That's why I depend on

HILLYARD MAINTAINEER SERVICE

Why "buck" the problem when you can relax with easy-going Hillyard *Floor Care*. Simplified Hillyard Care substitutes "know-how" for brawn . . . easier methods save man hours of work . . . specialized *chemical* products perform with "behind-the-ears" thoroughness . . . when I need help—Hillyard sends along a trained floor expert to lend a hand on the job . . . his straight-from-the-shoulder advice doesn't cost me a cent.

YOU CAN'T BEAT SERVICE LIKE THAT

any day in the week—particularly NOW when *good* maintenance men are so hard to find.

★ Talk over your maintenance program with a Hillyard Maintaineer today. Get the benefit of his years of specialized experience. Learn the Hillyard way to maximum maintenance with a minimum crew . . . and *reduce those costs as much* as 50%. Write for Free Hillyard Help.

"on your staff not on your payroll"

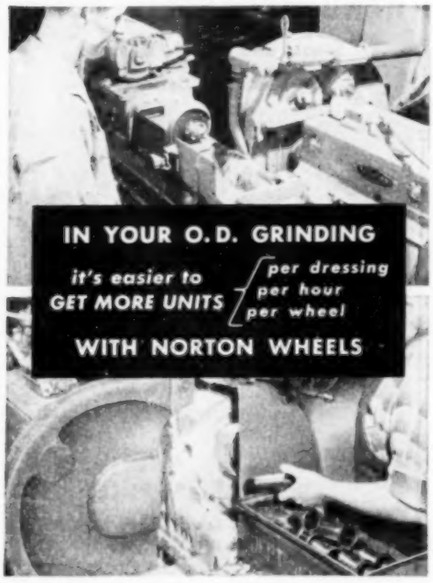
Dept. D1-11

HANDLE WITH HILLYARD CARE!

St. Joseph, Missouri

Branches in Principal Cities

BREVITY—Identify by IEN - 11510 If you write the maker



With Norton wheels for cylindrical or centerless grinding it's easy to get exactly the required tolerances and finish . . . in piece after piece . . . hour after hour . . . with a minimum of dressing or replacement. Because:

Norton Wheels Cover Your O.D. Jobs. Whatever your applications, in the *complete* line of Norton ALUNDUM* or CRYSTOLON* wheels you're sure to find exactly the right combinations of abrasives and bonds for top cutting performance and extra long wheel life — and Norton uniformity assures this top performance in *every* wheel.

Norton Service Covers Your Grinding Problems. Your Norton Distributor can practically always tell you the types of wheels you need. Backing him is the Norton Abrasive Engineer in your area. And behind both is the technical staff of the world's largest abrasive manufacturer.

Norton Stocks Cover Your Delivery Requirements. Norton Distributors keep ample stocks of all popular O.D. wheels. Larger stocks are maintained in Norton warehouses in key cities, and you can count on prompt deliveries from Norton Company's complete stocks in Worcester.

Handy Illustrated Booklet contains many helpful facts and provides convenient selection charts. Ask your Norton Distributor, or write direct for Form 2006, NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities.

*Trade-Marks Reg. U.S. Pat. Off. and Foreign Countries

NORTON ABRASIVES

Making better products to make other products better

BREVITY—Identify by IEN - 11512 If you write the maker

METAL SPRAYING . . Gas fired gun feeds, melts and sprays metal wire

Source: METALLIZING ENGINEERING CO.
38-16 30th St., Long Island City 1, N. Y.

For build up and protection

Siphon action that balances oxygen and acetylene against normal variation is combined with a governor that adjusts the drive in step with varying drags or fluctuating air pressure in this new gun. The result is steady operation under varying conditions in either machine-mounted or hand-held application. Two designs include a Type 4E for machine-element work and a Type 5E primarily to apply corrosion-protective coatings on structural surfaces. Both guns weigh approximately 4¾ pounds. Lubrication is by a pump.

Type 4E will handle any metal in wire form from No. 20 B&S gage to ⅛ in. including carbon steel, stainless steel, Monel Metal, bronze. It feeds the wire at 1½ to 12 fpm. and is designed particularly for machine-parts repair and salvage.

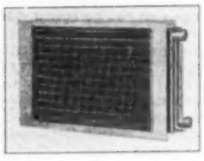
Type 5E is intended to melt and deposit metals such as aluminum and zinc. It handles them in wire form, $\frac{1}{16}$ in. in diameter, at feed rates between 2½ and 20 feet per minute. It deposits 55 lb. of zinc or 15 lb. of aluminum per hour.

Bulletin 94 and 95, 4 pages each, provide illustrated description and specifications, including an excellent internal view to point out the design features.

BREVITY—Identify by IEN - 11513 If you write the maker

HEATING . . Tubular radiator to heat air that is moving in a duct

Source: REMPE CO.
338-42 N. Sacramento Blvd., Chicago 12, Ill.



Hi-Cap designates a new line of radiators employing copper tubing and headers assembled in steel housings for duct installation. The tubes are fitted with aluminum fins, collared in position, seven per inch. Each assembly is tested to 350-lb. air pressure and for steam working pressure to 125 pounds.

Overall capacities in the line, based on air at 500 fpm., is 60,000 to 300,000 btu. for a single row assembly with inlet and outlet on opposite sides. It is 129,000 to 775,000 btu. per hr. in a double-row assembly with return bends connecting the rows on one side and both inlet and outlet on the other side. These figures, for the single row assembly, are based upon heating air from 80 to 120 deg. F. For the double-row unit, rated inlet is at 45 deg. F. and outlet is at 120 deg. F., all on 5-lb. steam pressure.

Face area ranges from 3 to 18 sq. feet. Width over the housing is 27 to 57 in. in the single row unit. It is 29 to 59 in. in the double-row assembly. Height is 20 to 50 inches. Face dimension is 4 in. on the single row unit and 6 in. on the double row.

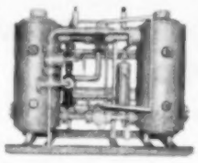
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11514 If you write the maker

It's UNEXCELLED FOR DEPENDABLE DEHYDRATION

The Quality Pritchard HYDRYER*

The Quality Pritchard HYDRYER* is *unexcelled* for dependable dehydration of air and other gases for instrument and process controls. Dual adsorbers provide continuous drying action. HYDRYER* is standard, packaged unit designed to reduce dew points to minus (−) 40°F. Only service connections are required. Specially designed HYDRYER* units can be tailored to meet your individual requirements.



*Registered Trade Name

WRITE TODAY FOR BULLETIN No. 16.0.080

Cooling Towers
Specialized Heat Exchangers
Gas & Air Treating

J. F. Pritchard & Co.
EQUIPMENT DIVISION
Dept. No. 172 908 Grand Ave. Kansas City 6, Mo.

District Offices: CHICAGO • HOUSTON • NEW YORK • PITTSBURGH
TULSA • ST. LOUIS • Representatives in Principal Cities from Coast to Coast

BREVITY—Identify by IEN - 11515 If you write the maker

WRIGHT Again!

now... new FRAME "B" *Speedway*

● Rugged construction, yet light and portable, the new **Wright Frame "B" Speedway Electric Hoists** are designed for service in practically any location. Ideally balanced for hook suspension. ● Ball and roller bearings, alloy steel gears, swaged cable fittings, heavy duty motor, silver contact controls are some of the features which assure long life and low maintenance cost. Capacities from 250 lbs. to 1000 lbs.

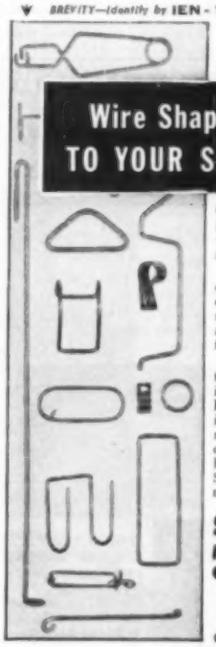
Write for literature.

ACCO York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety

BREVITY—Identify by IEN - 11516 If you write the maker



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
(Formerly ESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

BREVITY—Identify by IEN - 11517 If you write the maker

CORD SETS

That Are Right On The Beam

● Cords, Ltd. engineers and builds standard and special cord sets for any application. Proved dependability.

Most comprehensive stock of moulds and dies in existence for production of electronic cords and assemblies.

When you bring your cord problems to us you get the experience of the vast Essex Wire organization, plus integrated production of every component from wire bar to finished assembly. Write for details, explaining application.

WIRE SX PRODUCTS

CORDS LTD.
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

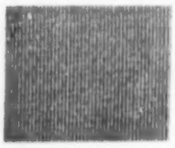
BREVITY—Identify by IEN - 11518 if you write the maker

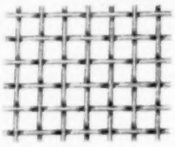
WOVEN WIRE

Roebling makes a complete range for every industrial need

FROM FINEST FILTER CLOTH to toughest aggregate screen, the Roebling line of woven wire products brings maximum efficiency . . . exceptional service life and dollar-savings. And that's because Roebling offers you exactly the right weaves and constructions for your particular operations . . . combined with wires made of special metals or alloys that will stand up best and longest under your individual working conditions.

Send for full woven wire information today.





WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 11519 if you write the maker

PERMACEL News Graphic

SPEEDING PRODUCTION WITH INDUSTRIAL TAPES

PHILCO FINDS NEW STAIN-RESISTANT TAPES speed production, protect white and near-white surfaces from residue. **PERMACEL-71** holds metal letters in proper alignment until they are permanently affixed.

SPEEDIER, LESS EXPENSIVE "BUNDLING" **PERMACEL** Cloth Tape speeds assembling jobs for R.O.W. Distributors, of Rocky Mount, Va. Tape is easily applied; sticks tightly, is easily removed.

FREE!

JUST OFF THE PRESS

New 32-page use book. Send for your copy today. Over 100 close-up photographs of new and dollar-saving uses of tape. Write Dept. 6N.

INDUSTRIAL TAPE CORP., NEW BRUNSWICK, N. J.

NAME _____ PLEASE PRINT
TITLE _____
COMPANY _____
ADDRESS _____ STATE
CITY _____

Permacel

INDUSTRIAL TAPES

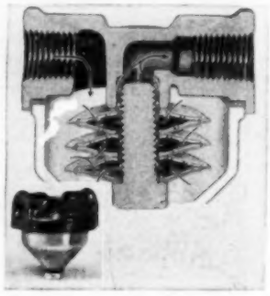
INDUSTRIAL TAPE CORPORATION, NEW BRUNSWICK, N. J.

makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry.

BREVITY—Identify by IEN - 11521 if you write the maker

FILTERING . . Disc assembly cleans gasoline flowing to an engine

Source: SPARKLER MFG. CO.
163 W. Lake St., Mundelein, Ill.



Only clean gasoline issues

Weight is 3¼ ounces. Overall dimensions are 2 in. in diameter by 2¼ in. in height in this new Rayclean Type-MB gasoline filter. The disc assembly is covered with non-woven rayon cloth through which the gasoline must flow between the inlet and outlet. The aluminum bowl provides room to hold entrained water for removal at intervals by taking the bowl from the aluminum housing. Application can be made in a fuel line to an engine without need for external support.

BREVITY—Identify by IEN - 11522 if you write the maker

DOOR OPERATOR . . Motor drive for overhead rolling doors to 800 lb.

Source: ROBOT APPLIANCES INC.
13167 Prospect Ave., Dept. IEN, Dearborn, Mich.

Four models are included in Series CA-300 in the company's new design of motor-driven operator for overhead rolling doors. Each will handle a door with maximum weight at 800 pounds. Height is from 8 to 14 ft. with a range of opening equal to these heights. Normal opening and closing speed is about 1½ feet per second. Control centers at a three-button remote station, or the company's magnetic remote control which can be specified. This latter unit can be operated by drivers while seated in their cars or trucks.

Drive is by friction so motion stops in the event that the door is blocked by any object. An electric over-load opens the motor circuit if the obstruction is not removed in a few seconds. An additional safety can be specified to reverse the door movement if it touches any object during its closing cycle. In the event of power failure the door can be disconnected from the operator and opened or closed manually.

BREVITY—Identify by IEN - 11523 if you write the maker

HEATING . . Booklet of standards on barometric and low level jet steam condensers

Heat Exchange Institute
122 E. 42nd St., New York 17, N. Y.

Third edition of the Institute's Standard on barometric and low-level jet condensers is a 24-page booklet that lists at $1. It describes standard types and nomenclature, performance calculations, construction, vacuum-pump capacity, installation, atmospheric relief valves.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11524 if you write the maker

CHAMPION

Precision Expanding Mandrel

Entirely new in principle, this positive drive, quick change work mandrel cuts handling time . . . guarantees concentricity . . . eliminates arbor pressing and collecting.

Lower cost production is assured with faster work, fewer rejects, less tool cost. Arbor is built for heavy loads. Sleeve closes at .003" under and opens to .007" over nominal size. Positive stop prevents overstrain. Holds tolerances of less than .0002" run out.

Standard sizes from 1/2" through 3" diameter, graduated by 1/16", fit your machine. Special sizes if required. More details on request. *Write Dept. IEN*

The WESTERN Tool & Mfg. Co., Springfield, Ohio

BREVITY—Identify by IEN - 11525 if you write the maker

MARKEM®

MM made to make your MARK

MARKEM helps make their names famous

Under these trade marks are made products ranging from toilet goods to aircraft. They include garments, hosiery, knit goods and textiles, radio and TV tubes, capacitors and resistors, vulcanizing equipment, cameras, pharmaceuticals, hand grenades, cartridges and canvas goods. All over the world, Markem methods, machines, type and inks are marking the products of industry.

There is a Markem method for almost every identification purpose. Markem Equipment is used for Marking on Products, Packages, Parts, or for producing Labels.

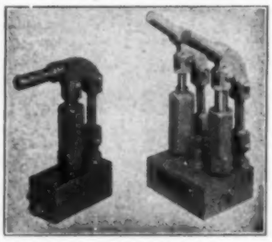
Submit your problem in detail with a sample of the item to be marked. Markem Machine Company, Keene, 2, New Hampshire.

MARKEM BETTER MARKING SINCE 1911

BREVITY—Identify by IEN - 11526 if you write the maker

HAND HYDRAULIC PUMP

Single and Double Designs
To 20,000 P. S. I.



Interchangeable Pistons ⅜-½-¾ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 cu. in.

Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

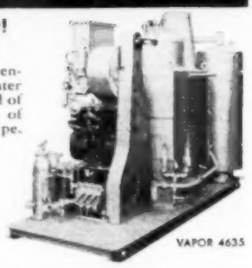
WILLIAM S. PINE
1637 E. 22nd St., Los Angeles 11, Calif.

BREVITY—Identify by IEN - 11527 if you write the maker

Instant Steam—VAPOR-CLARKSON STEAM GENERATORS

Where you want it! When you need it!

This packaged steam generator delivers a greater steam output per pound of weight and cubic foot of space than any other type. Full pressure in less than 2 minutes from a cold start. Automatic controls in cabinet modulates from ⅓ to full capacity, generating steam only when needed. Write for Bulletin No. 525.



VAPOR 4635

Also HOT WATER HEATERS for All purposes

VAPOR 4915

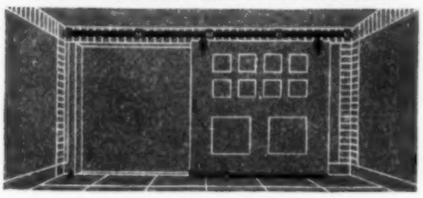
The Vapor 4915 Hot Water Heater with standard safety controls is built in one small compact unit.

• Uses only 1.65 gal. of fuel oil per hour at maximum output • Size 34" long; 19½" wide; 26" high • Push button starting • Maintains desired temperatures • Simple electric and water connections • Requires no attendant • Weighs only 225 lbs.

VAPOR HEATING CORPORATION
80 E. JACKSON BLVD • CHICAGO 4, ILLINOIS

BREVITY—Identify by IEN - 11528 If you write the maker

COBURN
SLIDING DOOR HARDWARE



- . . . LOW INSTALLATION COST
- . . . SMOOTH, EASY OPERATION
- . . . LONG, TROUBLE-FREE LIFE
- . . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION

BREVITY—Identify by IEN - 11529 If you write the maker

ACCO Registered
WIRE ROPE SLINGS

- *Made from preformed improved plow steel wire rope with independent wire rope core.*
- *Develops full catalog strength of rope. Ending is locked for full life of the wire rope.*
- *Flexibility of DUALOC permits close, secure snubbing.*
- *Wire ends are completely enclosed. Can't snag hands or clothing.*

TRY JUST ONE

- We're so sure you will like ACCO *Registered* WIRE ROPE SLINGS that we ask you to try just one. Put it in service with a sling you now use. Compare it in every way. You'll find it is stronger, lighter in weight, easier to handle, safer to use—and—cheaper in the long run.
- Proof-tested, registered, and warranted to satisfy. You can't lose if you use ACCO *Registered* STRAND-LAID and CABLE-LAID WIRE ROPE SLINGS. See your local distributor today or write us for further information.

*Trade Mark Registered

MEMBER THE NATIONAL SAFETY COUNCIL

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

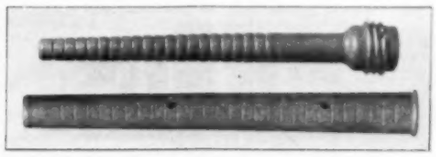
ACCO
AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT
In Business for Your Safety

Made by the Originators of Preformed WIRE ROPE

BREVITY—Identify by IEN - 11531 If you write the maker

WINDING . . Yarn carrying quill and spinning tube are made of plastic

Source: UNITED STATES RUBBER CO.
1230-32 Sixth Ave., New York 20, N. Y.



Another use for plastics

Service life is estimated to be two or three times that of a wood quill or a laminated-paper spinning tube in this new rubber-plastic compound design. The plastic will not splinter, chip or warp. Moisture does not affect it. Surface friction provides good yarn-holding properties.

Uscolite is the trade name. Some 150,000,000 quills and 20,000,000 tubes constitute the potential market. Three colors are brown, blue and grey. Each lot is molded to order.

BREVITY—Identify by IEN - 11532 If you write the maker

LUBRICATING . . Cutting coolant for use on aluminum and its alloys

Source: FISKE BROTHERS REFINING CO.
127-31 Lockwood St., Newark 5, N. J.

Ask for test sample

CSA No. 2 designates a new cutting oil for operations such as boring, reaming, facing, turning, threading aluminum and aluminum alloys. It is a companion material to the company's Majestic soluble oil for use in rolling aluminum ingots from large rolls to continuous mills where sheets or plates are further reduced. This latter material mixes with water to provide a stable emulsion that will keep the rolls cool and add fine work finish.

BREVITY—Identify by IEN - 11533 If you write the maker

VENTILATING . . Exhaust fan, 18 to 42 in., 3,180 to 30,500 cfm.

Source: STANDARD ELECTRIC MFG. CO.
951 Haddon Ave., West Berlin, N. J.

Bolts into duct

SKF bearings in sealed design are now employed in replaceable flange construction on the company's line of motor-driven exhaust fans to handle hazardous fumes and vapors such as paint spray. The motor is mounted outside of the duct that surrounds the fan and is connected to the fan by a V-belt. The fan itself is made with cast-aluminum blades. The cylindrical duct section is made of steel.

Fifteen sizes in the line employ ¼ to 7½-hp. motors on fans measuring 18 to 42 in. in diameter. Delivery rating against ¼-in. static pressure is 2,500 to 28,500 cfm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11534 If you write the maker

But look what he does to this live steam line. Pitch steam lines to drain condensate which might be carried to O-B GLOBE VALVE and interfere with operation.

Send for free book on valve installation tips

Ohio Brass VALVES
MANSFIELD OHIO

BREVITY—Identify by IEN - 11535 If you write the maker

HERMAN NELSON DE LUXE I MODEL PORTABLE HEATER

Electric motor powered.
Uses kerosene for fuel.
280-450,00 BTU capacity.
Completely automatic operation.
Automatic temperature control.

SAFE AND SURE PORTABLE HEAT!
. . . for Construction and Standby

A HERMAN NELSON Portable Heater supplies quick, safe, economical heat . . . for scores of uses. Heats and ventilates buildings under construction, storage, sheds, repair shops . . . thaws machinery and equipment, dries plaster or protects concrete pours. Widely used for aircraft ground service—both commercial and military, Herman Nelson units are easily moved and operated by one man. Superior features include *"sealed flame"* . . . eliminates dangerous fumes and fire hazards. Available in many models, types, and capacities.

Plan your heating requirements now! For full details write Dept. IN-11.

AAF

HERMAN NELSON

Division of AMERICAN AIR FILTER COMPANY, INC.
MOLINE, ILLINOIS

BREVITY—Identify by IEN - 11536 If you write the maker

TAKE THE SHACKLES OFF PRODUCT IMPROVEMENT!
with "Double-Enveloping" Cone-Drive Gears

Double-Enveloping means more teeth IN CONTACT since the worm or pinion is wrapped around the gear (1/11 of all gear teeth are always in contact).

Double-Enveloping means MORE CONTACT PER TOOTH since the gear is wrapped around the worm or pinion (continuous FULL DEPTH area contact).

Double-Enveloping, therefore, means not only increased load capacity for any given center distance, but also an HYDRAULICALLY SMOOTH power flow.

Double-Enveloping gears and reducers are so simple to use, too, as shown in Bulletin #789-50. Ask for a copy.

CONE-DRIVE GEARS
DOUBLE-ENVELOPING GEAR SETS & SPEED REDUCERS
Division Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

BREVITY—Identify by IEN - 11537 If you write the maker

Globe Ramp Eliminator
Keeps Plant Traffic on the Level

A Globe Ramp Eliminator averts the dangers of makeshift gangplanks and provides safe, dependable, and fast vertical transportation between levels. This means less risk of damage to materials or injuries to workers.

With a Globe Ramp Eliminator, movement of materials is always across a sturdy, safe level platform instead of up or down steep ramps or temporary makeshifts. This adds up to safer, faster, easier, and cheaper handling of goods.

Got a Lifting Problem?

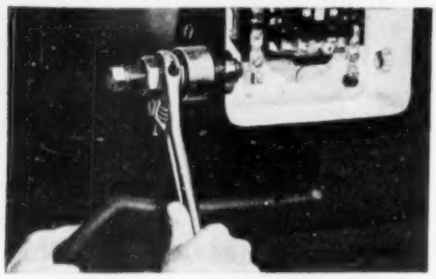
GLOBE
has the answer

Muscle is the world's most wasteful lifting power. A Globe OiLIFT will do it cheaper and better.

For helpful information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc., write for bulletin IE-313.

GLOBE HOIST COMPANY • 1000 E. Mermaid Lane, Philadelphia 18, Pa.
(Factories at Des Moines, Iowa & Philadelphia, Pa.)

BREVITY—Identify by IEN - 11538 If you write the maker



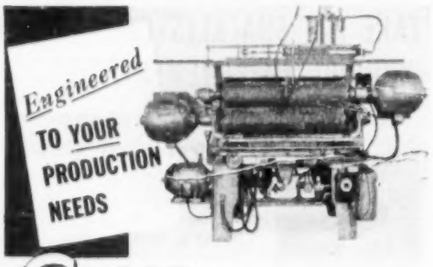
Accurate "clean" openings for conduit easily made in 1½ minutes or less

Speed conduit installations with GREENLEE Knockout Punches and Cutters. Eliminate time-wasting drilling and filing to enlarge holes. Do the job in 1½ minutes or less with these GREENLEE tools that cut smooth holes up to 4" to accommodate conduit in sizes ranging from ½ to 3½". Do the job neater, faster, easier, this way.

GREENLEE

GET FACTS TODAY on all four types of Greenlee Knockout Punches and Cutters and HydraRam Hydraulic Knockout Punch Driver. Greenlee Tool Co., 1871 Herbert Ave., Rockford, Illinois.

BREVITY—Identify by IEN - 11539 If you write the maker



CLAIR SURFACE FINISHING MACHINES

For Surface Finishing: screw drivers, chisels, pliers, saws, wrenches, compacts, cigarette cases, fine silver, surgical instruments, fan blades, flat iron sole plates, many other similar items

Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.

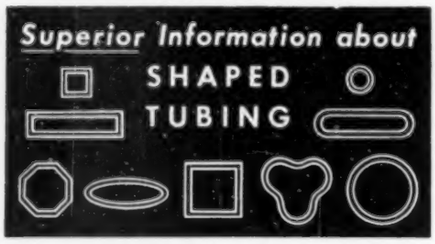
CLAIR MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.

BREVITY—Identify by IEN - 11540 If you write the maker

Superior Information about SHAPED TUBING



Superior draws fine small tubing in dozens of standard and some specialized designs in scores of analyses. But because of Defense Orders and metal shortages we may not be able to supply your immediate needs.

If you need shaped tubing with a MAXIMUM CIRCUMFERENCE of 2", tools may be available at Superior for its production. Please include a print or sketch showing dimensions, radii, tolerances, analyses and temper when you inquire.

For information about Superior's ability to cold draw-round or shaped tubing, write for Bulletin #32. It gives production limits, standard tolerances and analyses regularly available. Superior Tube Company, 2016 Germantown Ave., Norristown, Pa.

Superior

THE BIG NAME IN SMALL TUBING

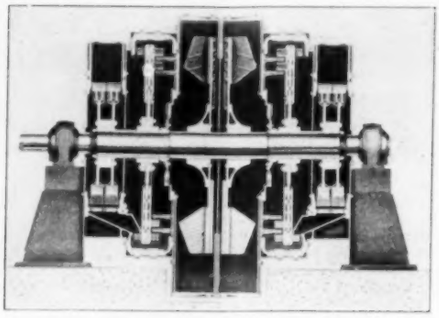
All analyses .010" to 5/8" O.D.
Certain analyses (.035" max. wall) up to 1-3/8" O.D.

West Coast: PACIFIC TUBE COMPANY, 5710 Smithway Street, Los Angeles, Calif., UNderhill 8-1331

BREVITY—Identify by IEN - 11541 If you write the maker

PULVERIZING . . Impact machine prepares and feeds coal to a burner

Source: RILEY STOKER CORP.
91 Neponset St., Worcester 6, Mass.



By experts in the power field

Five sizes ranging in capacity from 6,500 to 40,000 lb. of coal per hr., based on coal having a grindability rating of 50, are included in the company's new Riley-50 pulverizer. A double assembly is shown in the illustration with feed from both ends where initial impact sections reduce the coal going to the main pulverizing section so at least 40 percent will pass through a 50-mesh screen. The coal moving to the next sections toward the center is finally pulverized to enter the fan section for delivery. The largest machine has overall length, exclusive of the driving motor, of 12 ft. with depth at 10 ft. and height at 7 ft., 8 inches.

Tramp iron, iron pyrites and other foreign materials in the coal are rejected to a side compartment from where they can be dumped clear of the machine. The pulverizing elements are faced with tungsten carbide. Anti-friction bearings are outside of the housing at the two sides to support the main shaft and revolving elements. The primary air fan, centrally located in the double unit illustrated, is a part of the complete assembly.

BREVITY—Identify by IEN - 11542 If you write the maker

FASTENING . . Earth anchor screws into ground, compacting action

Source: VAN DYKE INDUSTRIES
3623-27 Cahuenga Blvd., Los Angeles 28, Calif.

Quickly in or out

New EZY Anchor is made of steel in two screw-equipped body sizes measuring 2 by 66 in. and 2½ by 54 inches. Length is extended by telescoping barrels having 3 to 5-in. diameters in ½-in. steps and lengths of 31 and 35 in. respectively. Fifteen turns required for average installation can be made in three to five minutes. The anchor can be backed out in two minutes. The screw end compacts the soil tightly around itself as the anchor descends. In soft boggy ground the extensions permit desired depth of penetration.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11543 If you write the maker

ELIMINATE HUMAN ERRORS WITH INDICATING MICROMETER & COMPARATOR

COMPARATOR MASTER MICROMETER GO-NO GO GAGE 1" RANGE IN 10000ths - NO GAGE BLOCKS NEEDED

* HUMAN ERRORS THROUGH DIFFERENCES OF "FEEL" ELIMINATED.
WILL DETECT OUT-OF-ROUNDNESS, OVALNESS AND TAPER.

SEND FOR ILLUSTRATED CIRCULAR

GEORGE SCHERR CO., Inc.
198-C LAFAYETTE ST. • NEW YORK 12, N.Y.

BREVITY—Identify by IEN - 11544 If you write the maker

SAFETYMIX

EXTRA SHOWER SAFETY . . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS
. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT
. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE
. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE
. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

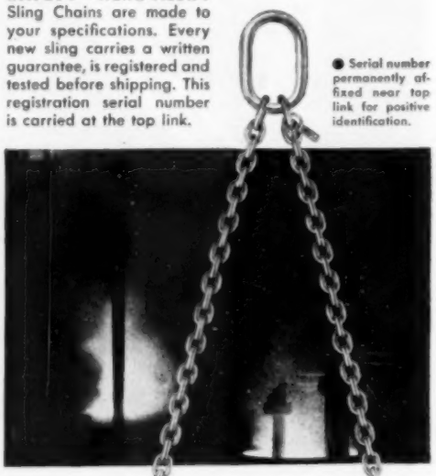
BREVITY—Identify by IEN - 11545 If you write the maker

NONE BETTER . . . America's First and Safest HERC-ALLOY SLING CHAINS

STRENGTH—Size for size, no other sling chain offers a greater tensile strength. HERC-ALLOY will not crystallize—never requires annealing.

SAFETY—HERC-ALLOY Sling Chains are made to your specifications. Every new sling carries a written guarantee, is registered and tested before shipping. This registration serial number is carried at the top link.

● Serial number permanently affixed near top link for positive identification.



● Identify HERC-ALLOY by the patented Inswell side weld with the extra swell of metal on the inside of the link.

EFFICIENCY—Lighter, stronger HERC-ALLOY Sling Chains feature the exclusive short, narrow link design which holds firmer, less tendency to kink, less gouging. Workmen handle HERC-ALLOY with less effort.

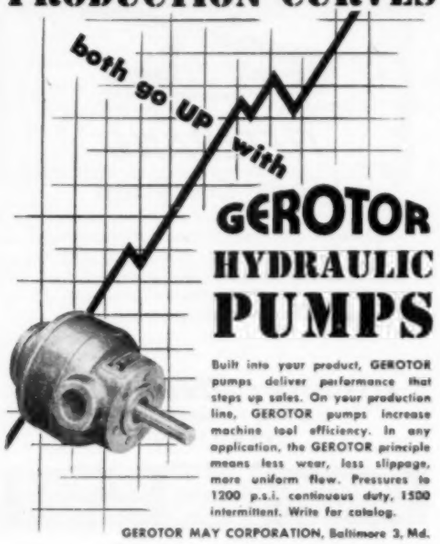
PREFERENCE—Men who buy and use sling chains are influenced only by facts learned through experience. HERC-ALLOY Sling Chain preference has been built up over the years, not just by what we say, but by how HERC-ALLOY performs on the job.

Write for Data Book No. 3 which contains much useful manufacturing and application information on HERC-ALLOY Sling Chains.

COLUMBUS McKINNON CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corp.)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
District Offices: New York • Chicago • Cleveland
Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can., and Johannesburg, South Africa.

BREVITY—Identify by IEN - 11547 If you write the maker

SALES CURVES...
PRODUCTION CURVES



GEROTOR
HYDRAULIC
PUMPS

Built into your product, GEROTOR pumps deliver performance that steps up sales. On your production line, GEROTOR pumps increase machine tool efficiency. In any application, the GEROTOR principle means less wear, less slippage, more uniform flow. Pressures to 1200 p.s.i. continuous duty, 1500 intermittent. Write for catalog.

GEROTOR MAY CORPORATION, Baltimore 3, Md.

BREVITY—Identify by IEN - 11548 If you write the maker

Lightnin® Mixers
MIXCO® Engineered

Clip and save this handy SELECTION CHART of MIXERS YOU MAY NEED

FOR LIGHT LIQUIDS, dissolving materials or suspending solids (when viscosities are below 500 centipoises) . . . Lightnin SERIES C, CV and S direct drive portable mixers. 1750 RPM or variable speed. Sizes ⅛ to ¾ HP.

FOR HEAVIER DUTY OPERATION . . . Lightnin SERIES M, direct drive, 1150 RPM. Sizes 1 to 3 HP. Available for wide range of current characteristics.

FOR HEAVY LIQUIDS (500 to 4,000 centipoises) . . . Lightnin SERIES D, gear drive mixer, operates at reduced propeller speeds. Gears are completely enclosed. Sizes ¼ to 3 HP.

WHERE ELECTRIC POWER CANNOT BE USED . . . Lightnin SERIES AG (gear drive) and SERIES AR (direct drive) air driven mixers. Turbine type air motor is non-sparking, totally enclosed; cannot be overloaded or burned out. Variable speed, controlled by throttle valve. Sizes ⅛ to 1 HP.

For Complete Information, GET THESE HELPFUL LIGHTNIN CATALOGS

DH-50 Laboratory Mixers
B-56 Condensed Catalog—complete line
B-75 Portable Mixers
B-78 Propeller Mixers for Closed Tanks
B-76 Side Entering Mixers for Tanks up to 5 Million Gals.
B-89 Turbine and Paddle Agitators, 1 to 500 HP

MIXING EQUIPMENT CO., Inc.
(MIXCO) 124 Mt. Read Blvd., Rochester 11, N.Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1
REPRESENTATIVES IN PRINCIPAL CITIES

IDEAS FOR YOU

IEN - 11550

Electric heating cable, General Electric design, will let Bucyrus-Erie say, "let it snow", up in Milwaukee this winter. The cable is lying right now just below the company's crane and transport runways. It is hitched to some step-down transformers all ready to go to work.

IEN - 11551

Messengers don't drag their feet at Bridgeport Brass. This company has just installed the Mix & Genest selective automatic pneumatic tube equipment, IEN-8280-50, marketed in this country by IT&T's International Standard Trading Corporation. Now messages and samples travel back and forth through the 30-acre plant at 1,500 fpm.

IEN - 11552

Many a clean shave will have the assistance of Osborn brushes. Two sets of them remove heat-treat scale and prepare the surface for etching on razor blades in strip form, traveling at 50 fpm. They replace a six-station machine.

IEN - 11553

Two old boilers and a lot of pipe have joined the scrap drive, replaced by radiant glass panels for heating an upstate New York plant. Estimated cost to run them for a year is about $8,000 as compared to $15,000 for coal and a fireman. Maker is Continental Radiant Glass Heating Corp.

IEN - 11554

Non-shrinking mortar, used for some 30 years to grout heavy plant machinery into place, now finds use in laying floor tile. No shrink—no cracks—no openings for corrosive or fermentable materials to enter. Master Builders supplies the metallic aggregate, offers instruction folder.

IEN - 11555

Vibrators aren't news on hoppers and bins. They certainly are on highway dump trucks where Cleveland Vibrator is putting them now to unload cement. It seems that cement has a tendency to pack in transit and thus slow down unloading. The vibrator livens up the cement so it will unload readily.

IEN - 11556

Ever see a strip of metal with slugs of precious metal spotted in position? D. E. Makepeace Company now is making it by brazing precious-metal contacts into a base-metal strip. You take this strip and blank out the part ready for use or for further forming. Cold working makes the contacts hard.

IEN - 11557

O-Ring design one of your headaches? Arrowhead Rubber will send you a data sheet on which to note your symptoms. You fill it in and send it to their engineers. They look it over and return it with their recommendations. No obligation. Follow the prescription and no more headache.

BREVITY—Identify by IEN - 11558 If you write the maker

Fire low-cost HEAVY OILS with COMPLETE dependability

IRON FIREMAN
Rotary
OIL BURNER
makes steady, uniform flame with No. 6 oil or lighter

Fires heat-rich Nos. 5 and 6 oils (or lighter) with a steady, uniform flame at varying oil temperatures. Oil feed rate stays within ½ of 1% of setting, even when throttled down to 20% of capacity. The secret? It's Iron Fireman's Oil Volumeter which meters the oil by *volume*, rather than by tricky ports and valves. America's most advanced industrial oil burner.

Iron Fireman Commercial Oil Burner for Smaller Industrial Applications

An outstanding, highly efficient oil burner for smaller commercial and industrial use. Fires No. 2 oil or lighter; capacity 5 to 20 gals. per hour. Precise control of fuel and air gives superior performance and economy.

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IRON FIREMAN
3175 WEST 106TH STREET CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 11559 If you write the maker

FLAT SPRING STEEL

Roebling...for absolutely uniform quality

FOR FLAPPER VALVES, shoe shanks, measuring tapes! For steel rules, curtain springs, snap springs, lock springs and a thousand and one other exacting uses, Roebling high carbon flat spring steel is unsurpassed.

Roebling's *complete* manufacturing facilities bring positive quality control and assure a product that saves users' preparation time . . . brings faster, smoother operation. And Roebling flat spring steel is made annealed, hard rolled untempered; scaleless tempered; tempered and polished, blued and strawed.

Large quantities of Roebling flat, round and shaped wires are required in the rearmament program, but we will do our best to meet your delivery needs. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 11560 If you write the maker

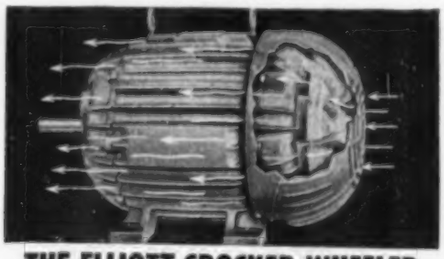
the No.1 money saver for your plant

DEWALT
gives you more work for your money in:
• PLANT MAINTENANCE
• PATTERN SHOPS
• CRATING AND BOXING

This versatile, all-purpose DeWalt is never idle! In *your* plant, it can take care of all your woodworking needs—quickly, accurately and safely. It is *many* machines in one! Simply by changing the cutting tool, you have another machine! Write for catalog. DeWalt, Inc., Dept. IE-11, Fountain Ave., Lancaster, Penna.

DEWALT A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 11561 If you write the maker



THE ELLIOTT CROCKER-WHEELER
Sealedpower MOTOR

Completely enclosed, there's no way in for dirt, dust, moisture or fumes. But there's an easy out for heat—via the 150% increased radiating surface of the many radial fins, plus the fan-driven air blast along and around the fins and frame. Cleans itself, too—the air blast gives dirt and dust the quick brush-off.

The C-W Sealedpower Motor is ideal for any service within its capacity range—proven by its 10-year service history. Available equipped with the newly designed C-W Brake . . . Also in explosion-proof construction. Bulletins from Elliott Company, Dept. IN, Jeannette, Pa.

CW-31

ELLIOTT COMPANY
General Offices & Main Plant Jeannette, Pa.
CROCKER-WHEELER DIVISION . . . AMPERE, N. J.
Branch Offices and Representatives in Principal Cities
Elliott Approved Service Shops Cover the Country

BREVITY—Identify by IEN - 11562 If you write the maker

BREVITY—Identify by IEN - 11563 If you write the maker

Heating Safety

Protects

YOUR Investment

Alnor Type 5200 Pyratac excess temperature cut-off.

The Alnor Pyratac excess temperature cut-off offers you low-cost, automatic protection against damage due to excessive temperatures . . . safeguards your investment in heating equipment and materials in process.

Simple in operation, the Pyratac constantly indicates temperature of the heater equipment and stands ready to sound an alarm and/or shut down heater circuits at a pre-set maximum safe temperature. Available in scale ranges from 0°-600° F. to 0°-3000° F. and Centigrade equivalents.

An Alnor quality instrument, featuring laboratory precision and husky construction; yet the price is only . . .

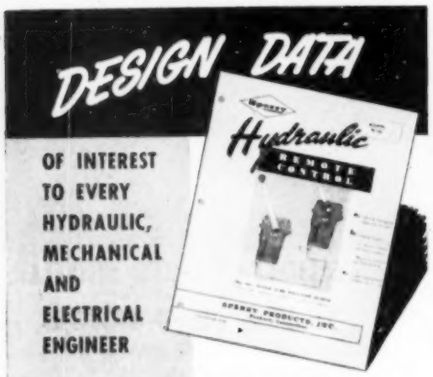
$85.00 —far lower than for ordinary instruments of this type.

WRITE FOR BULLETIN

Illinois Testing Laboratories, Inc.
Room 517, 420 N. La Salle Street
Chicago 10, Illinois

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 11564 If you write the maker



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Design refinements to assure maximum operating efficiency merit study of Sperry Hydraulic Remote Controls. Available in standard and special types for use with feed, valve, throttle, governor, variable speed and clutch controls.

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☐ Send Hydraulic Control Folder
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COMPANY .....
CO. ADDRESS .....
CITY ..... ZONE ..... STATE .....

BREVITY—Identify by IEN - 11565 If you write the maker

CRANE . . Mobile assembly rates to 20 ton on 35 ft. boom at 10 ft.

Source: UNIT CRANE & SHOVEL CORP.
6335 W. Burnham St., Milwaukee 14, Wis.

Unit-1520T is a new mobile crane that can be traveled over the road at speeds to 30 mph. for service as a crane or for conversion to a drag line, shovel, trench hole. When rigged as a crane it will take booms measuring 35 to 70 ft. in length. With its out-riggers in place over the back and sides, a 35-ft. boom will handle a 20-ton load on 10-ft. working radius.

Mounting is on a three-axle tandem-drive carrier built to handle the concentrated weight of the upper structure plus the lifting or digging capacity of the machine itself. Two engines provide dual power, one for travel and one for lifting and digging. The complete assembly weighs approximately 50,000 pounds. Detail illustrated information and specifications are included in 8-page Catalog 4000.

BREVITY—Identify by IEN - 11566 If you write the maker

HOIST . . Hand chain design rates ½ and 1 ton, 8 ft. lift

Source: COFFING HOIST CO.
802 Walter St., Danville, Ill.

Only 39½ pounds

Challanger trade names a new spur-gear hand-operated chain hoist that is now in production in ½ and 1-ton capacities. The design features provision for dissassembly in a few minutes with simple tools when servicing is required. The operating parts are sealed to operate in lubricant when the hoist is fully assembled. The back plate in the housing and all other load-carrying parts are made of steel to rate five times the load capacity of the hoist.

BREVITY—Identify by IEN - 11567 If you write the maker

INSULATING . . List of acoustical materials and their sound absorption coefficients in bulletin

Acoustical Materials Association
59 E. 55th St., New York 22, N. Y.

Information on the sound-absorbing materials made by 13 member firms in the association is presented in revised 20-page Bulletin XIII. Each material is listed by trade name, type, size, coefficients, light reflection value.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11568 If you write the maker

Remove SCALE, PAINT, RUST Quickly . . . Easily

USE AURAND CLEANING TOOLS

For any hard metal or stone surface — iron—steel—brick —concrete, etc.

It's easy to remove paint, scale, rust and other accumulations with AURAND Cleaning Tools. Powered rotary chipping does a thorough cleaning job in less time. No special skill required. Even depth surface is assured by an adjustable shoe control. Cutter heads are renewable.

For further information, address Dept. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

BREVITY—Identify by IEN - 11569 If you write the maker

ALLEGHENY STEELBAND COMPANY

STEELBAND
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Now is the time to order Allegheny STEELBAND strapping, seals, tools, and accessories to insure your present and future needs. Our company is rapidly expanding to meet the growing demand for our products.

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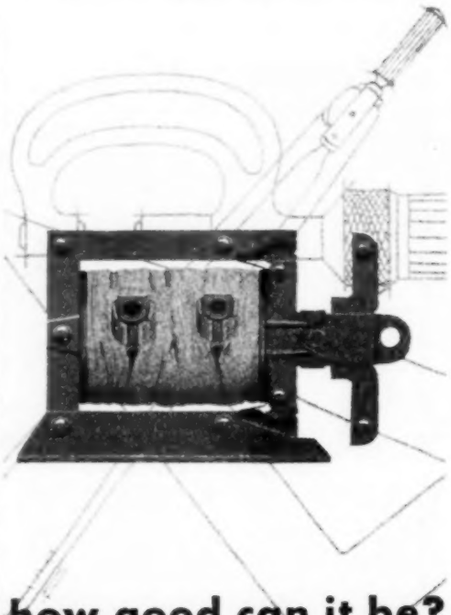
BREVITY—Identify by IEN - 11570 If you write the maker



how good can it be?

In the design, engineering and manufacture of electrical specialties, the guiding principle at Soreng is *How good can it be?*

"Good enough" is never good enough. Our designers, research and development engineers, our production specialists—all are constantly working to make Soreng products better than ever.

This is your assurance that every Soreng component—solenoid, switch, terminal or other electrical specialty—is the finest of its kind today . . . and will continue to be tomorrow.

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9555 Eden Ave., Schiller Park, Ill. (Chicago Suburb)
Plants: Schiller Park, Ill. • Fremont, Ohio

BREVITY—Identify by IEN - 11572 If you write the maker

ALL PEERLESS MOTORS ARE

"Peerless Registered"

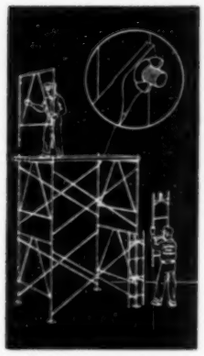
MORE than 90% of all Peerless Motors are custom manufactured to meet the specific operating requirements of the equipment with which they are to be used. So we "Peerless Register" every motor before shipment. The words "Peerless Registered" are a trademark, recorded in the U.S. Patent office. Only Peerless Motors can bear this phrase, and only Peerless Motors offer you this protection.

This registration record is assurance to both you and your customer that the Peerless Motor has been properly designed for your equipment so as to give best possible performance and long, satisfactory service. And the registration record makes possible the quick identification of any Peerless Motor—anywhere.

THE PEERLESS ELECTRIC CO., WARREN, OHIO
Manufacturers of Quality Motors Since 1893
Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

Peerless-Electric MOTORS·FANS·BLOWERS

BREVITY—Identify by IEN - 11573 If you write the maker



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SCAFFOLDING
has 'em all

SAFWAY WING NUT FASTENING IS
√ Simple! √ Positive!
√ Fast! √ Safe!
√ Trouble-Free!

SAFWAY—the original tubular steel scaffolding—is still the fastest, safest and most practical product available. Safway's engineered design and exclusive construction features mean higher profits for contractors. Learn how you can do better work—faster—on jobs of all sizes...

Write for Free Bulletin IEN-1151

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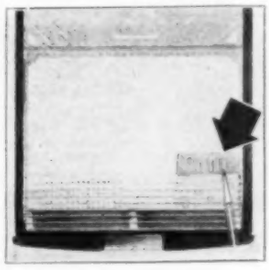
SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

BREVITY—Identify by IEN - 11575 If you write the maker

RECORD KEEPING . . Signaling tabs in plastic jacket for use with Kardex file

Source: REMINGTON RAND, INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.



Groups of ¼-in. tabs, enclosed in a plastic jacket, have been designed to apply on the company's Kardex record-keeping file equipment to signal operations as in a production-control set up. The tabs are moved up and down by inserting a pencil in a tiny hole in each tab.

The tab movement covers or uncovers identifying numbers on the visible margins of the Kardex cards to keep track of a sequence of operations that may or may not be in 1, 2, 3 order. The jackets or holders range from 1 to 10 in. in width. Multi-Flash Signal is the designation of the new tabs and their plastic jacket.

BREVITY—Identify by IEN - 11576 If you write the maker

PLASTICS . . Surface hardening liquid for use on acetate plastic products

Source: BEE CHEMICAL CO.
13797 South Ave. "O", Chicago 33, Ill.

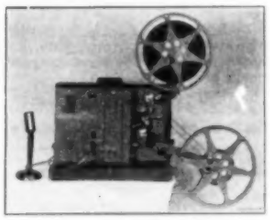
In metallic or pigmented colors

Logoquant Series A is recent addition to the company's line of surface-hardening liquids, previously described IEN-5046-49. Application by spraying on acetate plastics produces a film that imparts surface hardness while retaining flexibility. The film adheres well to the plastic. It dries quickly. Humidity in the atmosphere at application does not affect the material.

BREVITY—Identify by IEN - 11577 If you write the maker

PROJECTING . . Picture machine for 16 mm. film, magnetic sound track

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.



Model 400 is a new magnetic projector handling 16-mm. film that carries a 0.1-in. strip of magnetic oxide coated on the edge to magnetically record sound when a switch is turned to make active a plug-in microphone. After the recording is completed another control can be set for immediate play-back. Revision can be made as required. A film is coated for use in the equipment either before or after it has been employed for picture taking without regard to whether or not it has a previously impressed optical or photographic sound track.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11578 If you write the maker

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO-GRAM HEAVY DUTY SCALE
To speed up heavy duty weighing operations. Detecto-Gram Scale Model #1744 insures against overweight losses. Shows weighing error promptly. Famous for hair-line accuracy.
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DETECTO SCALES · INC.
MAKERS OF FINE SCALES SINCE 1900
540 NE PARK AVENUE • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 11579 If you write the maker

BIG BENEFITS WITH *Curvacore* TRANSFORMERS

HERE'S WHY new *Curvacore* transformers give you more for your distribution dollar:

- Exciting current is 50% lower. Wound core with cold-rolled preferred oriented steel provides the same magnetization with less current.
- Ratio of losses is improved. New coil design gives better balance of core steel to copper.
- Thermal capacity is increased. New insulation and generous ventilating ducts provide a more efficient cooling system.
- Regulation is improved up to 15%, because impedance is lower.
- Size and weight are reduced by 15%.

Take advantage of these benefits by installing *Curvacore* transformers on your distribution system. For more information contact your local A-C sales office or write for Bulletin 61B7641. Allis-Chalmers, Milwaukee 1, Wisconsin. A-3491

Curvacore is an Allis-Chalmers trademark.

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 11580 If you write the maker

HYDROSCALE

Proved on Hundreds of Jobs

SAVES DOLLARS IN TAKING INVENTORY AND IN CHECKING INCOMING MATERIALS

• This hydraulic crane scale weighs the load as you lift it to move it—Makes weighing so simple that it's done where it might otherwise be neglected. Cuts manpower and equipment tie-ups. Eliminates the need for weighing stations.

Low headroom
•
3 Dial sizes: 12, 24, 30"
•
Models 500 to 100,000 lbs. capacity

Write for our catalog.

HYDROWAY SCALES, INC.
20624 WEST 8 MILE ROAD P. O. Box 4754 · DETROIT 19, MICH.

BREVITY—Identify by IEN - 11581 If you write the maker

FOR FINER APPEARANCE, PERMANENT READABILITY

Identify your products with metal name plates by

We'll gladly quote, without obligation to you, on your requirements for name plates, instruction plates, dials, panels, scales, etc. We are equipped also to apply special finishes to aluminum products and parts, including ANODIZING by the exclusive Alumilite process. Write today for detailed information and quotations.

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1555 North Sheffield Avenue, Chicago 22, Ill., Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

BREVITY—Identify by IEN - 11582 If you write the maker

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How to avoid costly damage caused by rot and termites

Use Wolmanized* pressure-treated Lumber wherever timbers are exposed to conditions causing decay or termites. Preservatives that kill rot and termites are driven deeply into Wolmanized Lumber under high pressure (150 p.s.i.). This lasting protection—at low cost—helps Wolmanized Lumber last 3 to 5 times as long as untreated lumber!

Tells facts about millions of feet of Wolmanized Lumber in service in industries for years.

Tells how Wolmanized Lumber is treated and where it can save you money.

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332 South Michigan Avenue
Chicago 4, Illinois

Wolmanized PRESSURE TREATED **Lumber**
Stops Rot and Termites

BREVITY—Identify by IEN - 11583 If you write the maker

Recognize the type? You'll find him everywhere. Wherever paper towel dispensers say, *"Help yourself, there's no limit to the use or abuse,"* of this necessary washroom service!

Paper towel costs can be reduced up to 40%. How? With WESTROLL Paper Towels and Dispensers.

WESTROLL Dispensers feed just enough toweling — *and no more!* For a thorough hand drying job. Yet, WESTROLL towel service is never miserly. A choice of 3 feed-speeds fits WESTROLL service to any type of washroom traffic.

WESTROLL Paper Towels are soft, absorbent, 'right' in wet strength. And 33⅓% more economical in regular use than interfold towels. Add to this saving, the extra uses found for 'easy-to-pilfer' towels; more frequent cabinet fillings; extra janitorial work. That's the real picture. As your WEST man can prove in a 10-minute demonstration.

WEST DISINFECTING Company
42-16 West St., Long Island City 1, N. Y.

START SAVING . . .
the day you install WESTROLL Towels and Dispensers!

How about a WESTROLL demonstration?

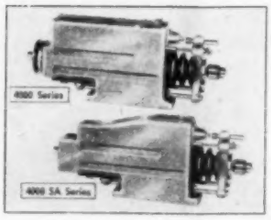
Name_____
Company_____
Address_____
City_____ Zone_____ State_____

Dept. 13

BREVITY—Identify by IEN - 11585 If you write the maker

DRILLING . . Unit head assembly for belt or gear drive, to 5/16 inch

Source: LOCKE GAGE CO.
10230-34 Woodward Ave., Detroit 2, Mich.



Spindle travel is 3 inches

Series 4000 with a built-in refrigerator-type compressor to provide feed pressure to 500 lb. and Series 4000 S-A with connection for a shop air line are new designs of unit drill head for machine assembly. Both are enclosed in housings measuring about 19 by 3¼ by 7⅝ inches. Both are hydraulically controlled by hydraulic fluid and an adjustable restriction valve.

Electric controls govern the operating cycles and can be set for any number of withdrawals and returns to the work for deep-hole drilling. Changes can be made to adapt the unit for tapping and burnishing. Installation is in any position. The large Series 4000 rates to $\frac{5}{16}$ in. in alloy steel. The smaller unit will drill holes to ¼ in. in mild steel.

BREVITY—Identify by IEN - 11586 If you write the maker

SPREADING . . Gluing machine applies adhesive for product assembly

Source: POTDEVIN MACHINE CO.
1285 38th St., Brooklyn 18, N. Y.

Sticky job runs smoothly

Feed roll measuring 2 in. in diameter is motor driven in this new latex-spreading machine. The adhesive is picked up and applied on the work by 4-in. rolls from a 2-qt. tank that can be removed for cleaning from the cast-iron housing. Parts in contact with the adhesive are made of stainless steel.

Several machine sizes take work from 1 to 12 in. in width. Corresponding table space ranges from 20½ by 22½ in. to 30 inches. The motor rates ¼ hp. and is standard equipment. Work thickness is maximum at 3 inches.

BREVITY—Identify by IEN - 11587 If you write the maker

PORCELAIN ENAMEL . . New house publication to keep you posted on current developments

Porcelain Enamel Institute Inc.
1008-12 Vermont Ave. N. W., Washington 5, D. C.

Applications and new developments in porcelain enamel, particularly for buildings, is the subject matter of new house publication "Porcelain Enamel". It is issued quarterly upon request. The first issue shows applications in exterior and interior walls, signs, plumbing fixtures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11588 If you write the maker

hose and duct clamps to fit special needs

Ordinary run of the mill hose clamps don't fill the bill for many applications with specialized or exacting requirements. Marman Clamps are engineered to fit particular needs.

For all around use . . . varying sizes and shapes . . . Marman Universal Clamps are the answer. Continuous band design for easy installation and wide size adjustment . . . stainless steel for strength and corrosion resistance . . . self locking swivel nut for resistance to vibration . . . can be used again and again.

For extra strength . . . Marman T-Bolt Clamps' exclusive features provide even circumferential take up, assure an efficient seal.

For fast assembly and disassembly . . .

Marman Quick Coupler Clamp patented snap on latch makes it go on or off in an instant. Particularly suitable for removable equipment, accessories and ducts.

Our catalog tells more . . . just write Dept. 1-11

MARMAN PRODUCTS CO. INC. 940 WEST FLORENCE AVENUE INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 11589 If you write the maker

SKINNER STAINLESS STEEL SOLENOID VALVES

Small size — Rugged — Large capacity

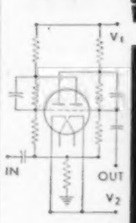
The small size of Skinner Solenoid Valves belies their rugged construction and unusually large capacity. These valves have a standard range from 5 to 250 p.s.i., and a special range from 5 to 850 p.s.i., and can be used for gaseous or liquid media. Their soft insert seat prevents leakage and positive action is assured by spring loading. Skinner Valves may be used in any position, with pipe connections furnished to suit specifications. Power consumption is 10 watts max. Special coils for high humidity or high temperature applications can be supplied. Standard models are approved by Underwriters' Laboratories.

Write for Bulletin No. 501

SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
139 Belden Ave., Norwalk, Conn.

BREVITY—Identify by IEN - 11590 If you write the maker

The Circuit* is important...



NEW! POTTER MINIATURIZED **COUNTER DECADE**

..this READ-OUT really counts!

DEPENDABLE
Widest possible bias range results from grid input, common tie-point feed, simple feed-back circuit and elimination of a complex readout matrix—all exclusive Potter features.

FAST AND ACCURATE
Absolute accuracy up to 130,000 counts per second assured by self-biasing under wide excursions of line voltage.

SIMPLE AND STRAIGHTFORWARD
Minimum number of components, all turret-lug mounted, in a true binary-coded decimal reset circuit.

COMPATIBLE
Binary-decimal coding (1-2-4-8) directly usable in computers, recorders and data-handling systems.

EASY TO MAINTAIN
Tube failure "locks-up" the decade and furnishes instantaneous identification through the on-off synchronization of neons and tubes, thus simplifying replacement.

Four ultra-visible neons, coded 1-2-4-8, are read as decimals with unerring ease — provide a swift check on tube operation.

This unique decimal read-out offers unparalleled observability. The lamps are brilliant and significant under high ambient lighting at oblique angles and from remote distances. No other visual indicator can be read faster or with less chance of error.

The indicating lamps couple with the decade stages and follow the true binary progression of count. Trouble in any stage is instantaneously reflected in its associated lamp. The lamps themselves are free from marginal voltage limitations.

In addition to a space-saving of one-third, the newly miniaturized decade provides a read-out adaptable to remote mounting. A small plug-in cluster of four neons is optional as a tube-servicing feature where frequency dividing, for example, makes a read-out unnecessary.

These electronic counting decades may be obtained as individual components. They are also available in complete counting, timing, computing or frequency-measuring systems. Detailed information or technical assistance will be provided upon request to Dept. 7-W.

*Manufactured under U. S. Patent 2538122 and other patents pending.

POTTER INSTRUMENT COMPANY
INCORPORATED
115 CUTTER MILL ROAD, GREAT NECK, NEW YORK

BREVITY—Identify by IEN - 11592 If you write the maker

New INVINCIBLE "ALL SERVICE" Vacuum Cleaner

For Both Wet and Dry Recovery

Invincible "All Service" Model 50"—½ H. P.

A frequent difficulty of vacuum cleaners with both wet and dry pickup is loss of efficiency due to humidity causing the filter bag to seal . . . *The advanced design of the new Invincible "All Service" entirely eliminates this problem!* After years of use, the new "All Service" will *continue* to operate at peak efficiency . . . The new Invincible "All Service" also has a *positive, automatic shutoff valve* in the water tank. It prevents messy overflowing that often damages the cleaner.

Write for complete information

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

BREVITY—Identify by IEN - 11593 If you write the maker

TRU-LAY PUSH-PULL CONTROLS

This

NEW 12-page Booklet

SHOWS YOU HOW TO CONTROL CONTINUOUS OR INTERMITTENT TRANSMISSION OF RECIPROCAL MOTION

Tru-Lay Push-Pull is solid as a rod—yet *flexible* as a wire rope. It operates while flexing . . . over short or long distances . . . with few or many bends. Capacity up to 1000 pounds input.

Write our Detroit office today for your copy of **DH-287**

601 Stephenson Bldg., Detroit 2 • 2475 Porter St., Los Angeles 21
Bridgeport, Connecticut

ACCO
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
In Business for Your Safety

BREVITY—Identify by IEN - 11595 If you write the maker

WELDING . . DC. arc machine, three-phase ac. input, arc control

Source: WESTINGHOUSE ELECTRIC CORP.
311 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Arc failure or sticking of the electrode can be prevented by application of a new arc-drive control the company is prepared to supply with its Type-RA selenium rectifier arc-welding machine, previously described IEN-10563-49. The new control permits the operator to adjust the arc characteristics of the machine to suit a given application.

From that point it operates automatically and instantaneously to provide an extra surge of welding current at the moment the arc is shorted either by contact between the electrode and the work or by a globule of molten metal bridging the arc gap. The control can be made inoperative when the machine is to be used short circuited on low resistance loads such as resistance heating.

The control consists of a three-phase full-wave rectifier energized by tertiary windings on the main welder transformer. A Thermo-guard and a control rheostat are included. Output the arc-drive circuit is at approximately 16 volts dc. The arc drive supplies no current to the arc when the voltage is higher than its value. It begins to supply current the instant the arc voltage falls below that point. Current increases as the arc voltage falls and reaches a maximum at zero.

BREVITY—Identify by IEN - 11596 If you write the maker

GAGE . . For depth measurements, Meehanite cast base, standard indicator

Source: SAART, KRAEMER & HANSCOM INC.
3 Washington Ave., Providence 5, R. I.

Meehanite stress-relieved cast base carries an integral reference platen at its top measuring 3¼ by 4 in. in this new Model DG-56-R-1 depth gage. The base mounts a dial indicator of specified standard make so its contact point projects upward through an opening in the center of the platen. Depth limit is 0 to 1 in. plus the indicator range or 1 to 2 in. plus the indicator range by application of one or the other of two points, both of which are supplied with each assembly as standard.

The platen face and its edges are finished ground and the face is Electrolized for corrosion resistance and to present a surface that test to 81 on the Rockwell-C hardness scale. Other non-working surfaces are crackle finish. List price of the base only is $27.50 in standard arrangement.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11597 If you write the maker

Cut production costs with a SHOPLIFTER

All steel, welded, framework. Easily operated hoist unit with automatic brake, holds load at any height.

•

500 pound capacity
Type D,
hand operated $254.00

•

1000 pound capacity
Type DX,
hand operated $490.00

•

2000 pound capacity
Type DX,
hand operated $590.00

•

Floor lock to hold machine steady: $16.00 extra for 500 pound sizes; $24.00 extra for type DX models.

•

PROMPT DELIVERY

4502 W. Lake Street
Chicago 24, Illinois

List prices, F.O.B. Chicago, subject to current discount

ECONOMY ENGINEERING CO.

BREVITY—Identify by IEN - 11598 If you write the maker

Welding Machine Manufacturer Specifies CASH-ACME

Where two or three stage high pressure reduction is required; a combination of CASH-ACME Automatic Pressure Reducing and Regulating Valves can be depended upon to do the job. Consistent, unfailing operation due to precision construction of the finest quality materials is the reason CASH-ACME Valves are being specified by more and more industries. Write for literature describing CASH-ACME Automatic Valves and the pressure control job they can do on your products.

CASH ACME SILENT SENTINEL Automatic Valves

A. W. CASH VALVE MANUFACTURING CORP.
6612 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 11599 If you write the maker

DODGE BABBITTED BEARINGS

PRECISION BORED!

TRUE RUNNING!

DEPENDABLE!

● There's a *big* difference between a Dodge Journal Bearing and a common flat box — a difference that pays off in longer years of service, smoother operation, power savings! Dodge Journal Bearings are precision bored and faced — to insure maximum bearing surface for radial and thrust loads . . . Solid or Split Journal. Shaft sizes from 1/2" to 3-15/16". Stocked by Dodge distributors. Write us for full details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.
FIRST IN POWER TRANSMISSION MACHINERY

BREVITY—Identify by IEN - 11600 If you write the maker

Welding lots of Different pieces or lots alike . . .

This Positioner Increases Production . . . Improves Welds Cuts Rod Waste

This universal table top makes the Worthington Welding Positioner as profitable on *job* work as in mass production.

Those "T" slots make the table adaptable to any shape of work piece and a wide range of sizes. No special jigs or fixtures needed.

Result—up to 50% more footage, better welds (using higher current and heavier rods), less welding rod waste.

Welding positioner capacities from 100 lbs to 30 tons. Also: turning rolls from 3 to 150 tons, stationary or self-propelled.

Write Worthington Pump and Machinery Corporation, Dunellen, New Jersey, for bulletins or additional information.

Y.1.5

WORTHINGTON
WELDING POSITIONERS

BREVITY—Identify by IEN - 11601 If you write the maker

MECHANICAL MUSCLES
WHICH ELIMINATE THE NEED FOR EXTRA HANDS — EXTRA TRIPS

PORTELVATOR
HANDY HAMILTON PORTABLE ELEVATING TABLE
LIFTS — LOWERS — LEVELS TRANSPORTS
★
learn the penny-pinching particulars, write for this
FREE BULLETIN NO. P-505

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—Identify by IEN - 11602 If you write the maker

LOCALITES
FOR BETTER LIGHT ON THE JOB
Directs Light Exactly Where Needed as Easily as Pointing Your Finger
Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

MODEL 3470-P-172
Overall length 48½". Three instantly adjustable joints. Circular base for machine or wood screw mounting.
$7.16 EACH in pkg. of 6
Single Units $8.95 ea.

- Rugged Construction to stand strains and shocks.
- Instantly Adjustable with full swivel ball and socket joints.
- Infra-red Baked Enamel Finish — Exterior, Wrinkled Gray — Reflector Interior, high temperature White.
- Reflector accommodates 100 watt A-21 medium screw base lamp.
- Wired Complete with switch socket and 8 ft. oil resistant cord.

WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
Localites are available through selected distributors everywhere.

LOCALITE fostoria for Light ON the Job
Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 11603 If you write the maker

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● Send today for this 8-page booklet packed with valuable information on all types of floors. Tells you how they're made — how to clean them — protect them — make them wear longer. Answers 101 questions. Saves you time and money! Every plant and office should have one.

MAIL THIS COUPON NOW FOR YOUR COPY!

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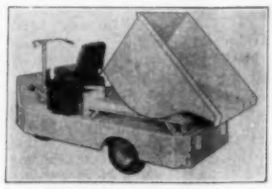
BOSTON 29, MASSACHUSETTS

Please send me your FREE FLOOR-CARE BOOKLET
NAME ..... (Please print clearly)
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE .....

BREVITY—Identify by IEN - 11604 If you write the maker

TRUCK . . Engine drive platform unit carries ½ yd. self-dumping hopper

Source: KALAMAZOO MFG. CO.
1825-29 Read St., Kalamazoo 24F, Mich.



New utility combination

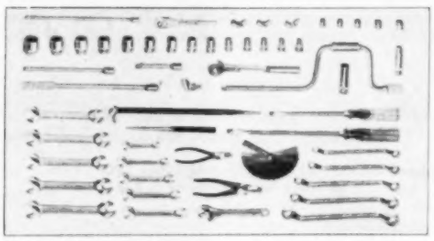
Combination of the company's Model-2500 platform truck, previously described IEN-5291-51, and a Roura ½-yd. self-dumping hopper makes a utility unit to handle wet or dry bulk materials. The hopper bolts to the truck body, locks in carrying position, dumps when it is unlocked and returns for locking as soon as the load is out.

The truck has a 1-ton load capacity when the wheels are equipped with 12-in. pneumatic tires. This capacity increases to 3,500 lb. with 15-in. cushion tires. Turning radius to clear the truck body is 81 inches. Drive is by a two-cylinder air-cooled Model-TF Wisconsin gasoline engine rating 13 hp. at 2,600 rpm. The three-speed transmission provides for maximum speed at 15 miles per hour.

BREVITY—Identify by IEN - 11605 If you write the maker

WRENCHES . . Hand tool set includes pliers, screw drivers, feelers

Source: BONNEY FORGE & TOOL WORKS
721 Meadow St., Allentown, Pa.



No. DSL2-B is a new set of socket, box and open-end wrenches with associated tools to make a total of 55 units, particularly designed to service diesel locomotives. Individual pieces in the set are shown in the illustration. No. DSL3-B is a similar set for electricians and No. DSL4-B is for pipe fitters. Each set is packed in a metal box.

BREVITY—Identify by IEN - 11606 If you write the maker

FLOORS . . Instruction booklet tells how to lay company's steel floor armor

William F. Klemp Co.
6605 S. Melvina Ave., Chicago 38, Ill.

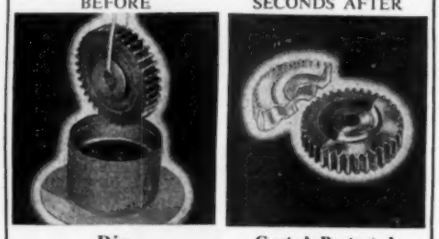
1951 edition is announced for the company's Form 142, a 20-page booklet titled "Instructions for Laying Klemp Hexteel and Floorsteel". It describes methods for laying steel floor armor in new concrete, in asphalt or magnesite, over old concrete, over wood, and in repairing damaged areas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11607 If you write the maker

HOT MELT PLASTIC COATINGS
for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER



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DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

BREVITY—Identify by IEN - 11608 If you write the maker

Q. How can steam pressure be converted into suction pressure?

A. With an I-R STEAM-JET EJECTOR

A steam jet, discharging into a venturi-shaped diffuser, creates suction pressures down to 3" Hg absolute. Two or more ejectors in series can supply pressures as low as .002" (50 microns)—for evacuating any type of air, gas, and vapor mixture, in any desired capacity. Pre-coolers, intercondensers and aftercondensers can be supplied as required for any application.

I-R Steam-Jet Ejectors are simple, dependable, economical. No moving parts—no lubrication—no vibration—no maintenance. Rugged construction, with one-piece stainless steel steam nozzles and accurate alignment of nozzle and diffuser assure sustained high efficiency year after year.

Send for free Bulletin 9013A.

683-4

11 Broadway, New York 4, N. Y. Ingersoll-Rand

BREVITY—Identify by IEN - 11609 If you write the maker

PRO·TEC·TOR

PAPER PLUGS and CAPS provide Inexpensive Protection

O.D.—I.D. TYPE Protects Inside, Outside and End surfaces
PLUG TYPE Protects Inside and End surfaces
STOCKED SIZES We carry a Complete Line of PRO-TEC-TOR PLUGS for Standard Female Pipe Threads
CAP TYPE Protects Outside . . . End Surfaces . . . Seals Inside area (Designed to shrink on protected part)

FOR...
★ Internal . . . External Screw Threads and Threaded holes ★ Ground, Polished, Plated and Painted Surfaces ★ Valve Seats, Tubes and Flared Tube Fittings ★ Sealing in Oil, Grease, Rust Proofing Compounds ★ Masking for Painting, Coating and Plating Operations.

FROM...
★ DIRT ★ MOISTURE ★ CHEMICALS ★ SCRATCHES

DURING...
★ PRODUCTION ★ HANDLING ★ SHIPPING ★ STORAGE

PRO-TEC-TORS are produced from tough fibre-type paper and are designed for your special needs. They are easy to assemble . . . remove . . . and they stay put because of their special ribbed and serrated construction.
PRO-TEC-TORS low unit price and ease of assembly will greatly reduce your "PROTECTION COSTS" when used to REPLACE . . . Molded Plastic Parts . . . Stamped Metal Parts, Rubber, Cork, Wooden Plugs or Adhesive Tape.
SPECIAL DESIGNS ENGINEERED TO MEET YOUR DEFINITE REQUIREMENTS—Let us help you with your "PROTECTION PROBLEMS". Send Blue Prints, Sketches or Samples with approximate requirements for quotations.

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12680 ALLEN ROAD, DEARBORN, MICHIGAN

BREVITY—Identify by IEN - 11610 If you write the maker

the SAF-I-SHIELD SAFETY GOGGLE

often copied... never excelled

- Comfortable
- Strong—Rugged
- Fits Over Personal Glasses
- Made of Optilite
- Optically Correct
- Low Cost

WRITE FOR LITERATURE AND PRICES

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MO. • BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada—PARMELEE LTD.—Toronto

BREVITY—Identify by IEN - 11611 if you write the maker

"MAGNETIC COUPLING"
Exclusive Feature of
DWYER
MAGNEHELIC PRESSURE GAGE

The unique design cannot be harmed by sudden pressure surges, shock loading or severe vibration. For accuracy, sensitivity, and long service life the Dwyer Magnehelic Gage cannot be equalled.

Extreme accuracy results from the elimination of friction between the flexible diaphragm and the indicating mechanism. A magnetic force transmits pressure fluctuations to the 3½" easy-to-read dial of the Dwyer Magnehelic Gage.

A Precision Instrument Sensitive to Pressure, Pressure Differentials or Vacuum from 0-½" water or 0-2 psi.

Send for Bulletin No. 250 for complete description today.

F. W. Dwyer Mfg. Co.
307 S. Western Ave.
Chicago 12, Ill.

BREVITY—Identify by IEN - 11612 if you write the maker

How a Pittsburgh Brush Solved an Oil Pressure Problem*

*An actual case history from the Allis-Chalmers Pittsburgh Works, manufacturers of transformers.

At Allis-Chalmers, well-known manufacturer of industrial equipment, the problem was to secure a satisfactory oil pressure test on transformer radiators. The key to the problem was to find a brush narrow enough to clean between cooling fins and strong enough to remove slag and spall on welds which could conceal pinholes. Pittsburgh engineers recommended an 8" rotary wire brush. The brush proved more than satisfactory and the problem was solved!

Let Pittsburgh Engineers Solve Your Brush Problems.

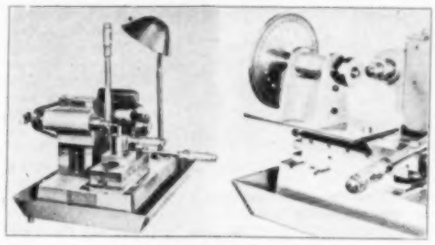
Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: Pittsburgh Plate Glass Company, Brush Div., Dept. M5, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH
Power Driven BRUSHES
BRUSHES • PAINT • GLASS • CHEMICALS • PLASTICS
PITTSBURGH PLATE GLASS COMPANY

BREVITY—Identify by IEN - 11614 if you write the maker

MILLING . . Hand feed machine mounts on bench, also turns and grinds

Source: VIKING INDUSTRIES
218-22 Montague St., Dept. J, Rockford, Ill.



Ask for Bulletin "Viking LMG 3"

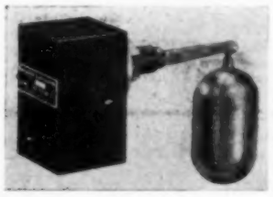
Type LMG-3 is a new bench-type hand-operated machine that can be set up for milling, turning and grinding operations in connection with fixtures available for this purpose. The machine mounts a single or a double-slide table providing 4 in. of movement, in two 90-deg. directions in the latter case. The table work surface measures 9 by 3½ inches. Dimensions over the base are 11 by 18 in. and over the collant pan are 15 by 21 inches.

The spindle is a 1-in. ball-bearing assembly with a 3/8-in. through hole and a No. 7 B & S taper. Drive is by belt connection to a ½-hp. 110/220 volt 60-cycle ac. motor operating at 1,725 rpm. Standard speeds are 825 and 3,450 rpm. Special speeds can be specified between 100 and 7,000 rpm. The spindle is vertically adjustable to a maximum distance of 7 in. between its center and the table top. Illustrated description with data on available conversion accessories are contained in a 4-page bulletin, "Viking LMG 3", available on request.

BREVITY—Identify by IEN - 11615 if you write the maker

SIGNALING . . Float operated switch controls liquids levels alarm circuit

Source: RELIANCE GAUGE COLUMN CO.
5905 Carnegie Ave., Cleveland 3, Ohio



Model EA-10 is new design of the company's Levalarm Model EA-6, previously described IEN-4792-48. The new unit replaces the cast-iron housing, formerly enclosing the lever-suspended float, with a threaded connection at the base of the lever so the float and lever arm are exposed. The threaded connection screws into an opening on a gage column so the float rides inside and the switch housing mounts outside.

The unit is available for any pressure between vacuum and 450 pounds. The switch rates 15 amp. on 110-volt ac. It can be employed to close an electric signal circuit or to operate a fuel cut-off in the event of low water in small boilers and various types of liquid-handling vessels.

The housing measures 3⅛ in. in width, 5½ in. in height. Overall length from the rear to the center line of the float support is 9½ inches. Contact operation can be specified normally closed or normally open.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11616 if you write the maker

GOES A LOT FARTHER

To Improve Production, End Dust Health Hazard Reduce Rejects and Maintenance Costs

HOFFMAN HEAVY DUTY
VACUUM CLEANING
Bigger Capacity—Higher Vacuum
Now Available in 5 Sizes of Improved Portables. Stationary Systems in a Complete Range of Sizes. Write for New Bulletins A-814 and A-816.

AIR APPLIANCE DIVISION
U.S. HOFFMAN
MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

BREVITY—Identify by IEN - 11617 if you write the maker

FOR YOUR PANEL DIALCO
A NOVEL and UNIQUE CIRCUIT INDICATOR

DESIGNED FOR NE-51 NEON LAMP
For 110 or 220 volt circuits
The required resistor is an integral part of this assembly —"built-in."
RUGGED DEPENDABLE LOW IN COST

PATENTED: No. 2,421,321, Cat. No. 321308-997

WILL YOU TRY A SAMPLE?
Write on your company letterhead. We will act at once. No charge, of course.

SEND FOR THE 192 PAGE HANDBOOK OF PILOT LIGHTS
Among our thousands of Pilot Light Assemblies there is one which will fit your special conditions. Many are especially made and approved for military use. We pride ourselves on prompt deliveries—any quantity.

ASK FOR OUR APPLICATION ENGINEERING SERVICE

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The DIAL LIGHT COMPANY of AMERICA
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BREVITY—Identify by IEN - 11618 if you write the maker

where dependable timing is required ...consult Cramer

As specialists in TIME as a factor of CONTROL, we have developed a wide range of timing devices for a great variety of commercial and industrial applications...and will welcome the opportunity to recommend the equipment best suited to meet your specific requirement. Write for complete information.

THE R. W. CRAMER CO., INC.
BOX 14, CENTERBROOK, CONN.

BREVITY—Identify by IEN - 11619 if you write the maker

You can have privacy and hear well too

In noisy offices a Burgess-Manning Acousti-Booth provides a "zone of quiet"... you can hear clearly in its hushed interior. A thick blanket of sound-absorbent fabric lining the walls traps the noise. Modern design. Movable. Floor and wall models. Wall model suitable for desk.

Quiet telephoning here

Mail Coupon For Free Booklet
BURGESS-MANNING COMPANY
ARCHITECTURAL PRODUCTS DIVISION
5970-A Northwest Highway, Chicago 31, Illinois
Please send me your booklet describing Burgess-Manning Acousti-Booths.
Name
Firm Name
Street City State

BREVITY—Identify by IEN - 11620 If you write the maker

BAYFLEX • DURACUT • SAF-T-CUT, reinforced abrasive disc-wheels . . the masters of your weld grinding and finishing problems. Greater resiliency and safety make these "Big Three" products first choice in foundries, metal fabricating and welding shops.

BAY STATE ABRASIVE PRODUCTS CO.
Westboro, Mass.

Branch Offices and Warehouses—Chicago, Cleveland, Detroit, Pittsburgh
Distributors—All principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd. Brantford, Ontario

BAY STATE

Send for latest information-packed "BIG-THREE" catalog. It contains such data as mounting instructions, recommended speeds, charts, specific applications, etc.

BREVITY—Identify by IEN - 11621 If you write the maker

Mathews Roller Conveyers

"ENGINEERED TO SERVE PRODUCTION"

● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

CHAIN CONVEYERS • LIVE ROLLER CONVEYERS • WHEEL CONVEYERS
ELEVATING CONVEYERS • BELT CONVEYERS • TROLLEY CONVEYERS
ROLLER SPIRAL CONVEYERS • PORTABLE CONVEYERS
SPECIAL CONVEYING MACHINERY

MATHEWS CONVEYERS

GENERAL OFFICES
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PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario

Engineering Offices or Sales Agencies in Principal American and Canadian Cities

BREVITY—Identify by IEN - 11622 If you write the maker

IF YOU WALK ON IT IT CALLS FOR OPEN STEEL FLOORING

SAFE FOOTING AT EVERY STEP

Build safe, dependable walking surfaces in your new or present industrial plant—indoors and outdoors—with Open Steel Flooring . . . the versatile, durable flooring of strength, safety, ventilation and light.

Be sure to investigate Open Steel Flooring and the new Specifications as described and illustrated in our new 16-page Idea-Book, "Versatile." Your free copy is ready to mail on request. Write for it today.

OPEN STEEL FLOORING INSTITUTE, INC.
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MEMBERS

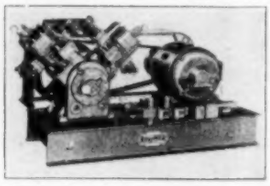
These Manufacturers assure top quality engineered grating.

WALTER BATES CO., INC. Joliet, Illinois
THE TRI-LOK COMPANY Pittsburgh, Pa.
BLAW-KNOX COMPANY Pittsburgh, Pa.
BORDEN METAL PRODUCTS CO. Elizabeth, N.J.
HENDRICK MANUFACTURING CO. Carbondale, Pa.
IRVING SUBWAY GRATING CO., INC. Long Island City, N. Y.
STANDARD STEEL SPRING CO., Gary, Indiana

BREVITY—Identify by IEN - 11623 If you write the maker

REFRIGERATING . . V-type compressor with belt connected motor, rates 40 hp.

Source: BRUNNER MFG. CO.
Broad & Utica Sts., Utica 1, N. Y.



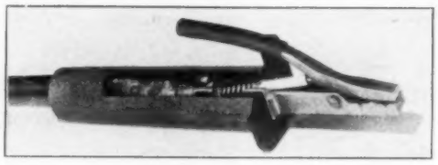
Type R-40,000 designates new assembly of 4-cylinder V-type compressor and belt-connected motor on a structural base. Type W-40,000 designates the same machine with the addition of a shell-and-tube water-cooled condenser. It is assembled beneath the base in connection with supporting legs at the two ends. The equipment is designed for continuous duty in refrigerating and air conditioning service. It includes controls for automatic shut-down in the event of excessive pressure or oil pressure failure.

Bore and stroke measure 4¼ and 5 inches. The compressor can be equipped for unloaded start and for four steps of capacity control. Weight is 2,345 lbs. in the compressor assembly. Overall dimensions are 73 by 41½ by 40 inches. The condenser increases overall length to about 103 in. and overall height to 50 inches. Assembly weight is then 3,185 pounds.

BREVITY—Identify by IEN - 11624 If you write the maker

WELDING . . Arc electrode holder in ratings of 300 and 500 amperes

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio



Cable is welded in

Insulated handle in this new Caddy electrode holder encloses the welded connection for the cable and also the compression spring that bears against the hinged jaw at the electrode-clamping end. Weld assembly with the cable is made by the company's Cadweld process to assure a permanent solid connection. An insulating shield is provided between the handles and the jaws as illustrated.

BREVITY—Identify by IEN - 11625 If you write the maker

TUBE MAKING . . New process announced for continuous tube mill using induction heat

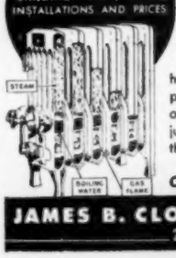
Yoder Co.
5555 Walworth Ave., Cleveland 2, Ohio

New process of making pipe and tube from hot-rolled strip steel is announced by the company in cooperation with the Tocco Division of Ohio Crankshaft Company. The strip is cold formed into tubular shape, then is welded by induction heating at 165 to 240 fpm. The mill can be operated at one to three shifts per day since the process is cold.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11626 If you write the maker

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES



STEAM HEAT! WHERE YOU WANT IT! WHEN YOU WANT IT!

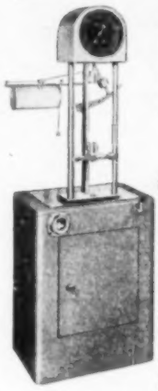
Why should your office employees suffer with the cold this winter—when it's so easy to keep them warm and comfortable with Clow Gasteam Radiators. Quick steam heat! Fingertip control! No hot water pipes, boiler or furnace room to rely on! Inexpensive, because you heat just the area where it's needed—not the whole plant.

Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS
201-299 N. Talman Ave., Chicago 80, Ill.

BREVITY—Identify by IEN - 11627 If you write the maker

small COMPACT TESTER — large ACCURATE RANGE



DILLON multi-low-range universal TESTER

A portable laboratory instrument that is accurate to ½ of 1%. Tests paper, thread, fabrics, plastics, springs, film, cord, wire, leather, resins, adhesives, glass, wood, ceramics, felt, cardboard, bakelite, insulation and any other materials which fall within its range. Has 5 scales: 0-10, 0-25, 0-50, 0-100 or 0-300 lbs.

Stress-strain curve automatically recorded on graph sheets. Limit switch prevents overrun. Indicates load as it is applied. Accessories permit transverse, tensile, compression and shear testing easily and economically. Speeds from 0" to 20" per minute. The ultimate in fine testing equipment yet low in cost.

Write or wire for illustrated bulletin—Today

W. C. DILLON & CO., INC.
1421-K SOUTH CIRCLE AVENUE FOREST PARK, ILLINOIS

BREVITY—Identify by IEN - 11628 If you write the maker

Cut Your Downtime on mill roll changing **to 1 Minute or Less** with the **NEW B&S**

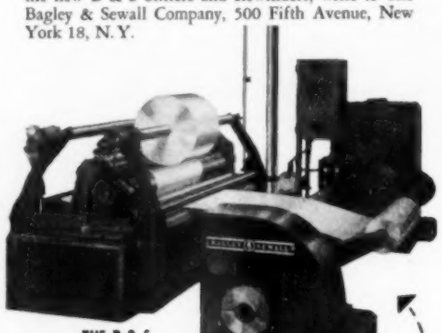
SHAFTLESS BACKSTAND

Money-consuming downtime on mill roll changing is cut to the bone by the wholly automatic B & S Shaftless Backstand. Here is what Mr. C. Carr Sherman, President of H. P. Smith Paper Co., has to say about this equipment:

"The engineering of this new unit indicates a fine understanding of the problems of the users of this type of equipment. The Backstand is much easier to handle as there are no shafts. It is also much easier and faster to make changes on it. I believe that changing rolls with this Backstand can be brought down to well under one half minute."

You may purchase the B & S Shaftless Backstand with or without the new B & S Slitter and Rewinder. The Backstand may be used on any type of rewinding equipment, as well as on waxing and laminating machinery, printing presses, etc.

For full details on the Shaftless Backstand and the new B & S Slitters and Rewinders, write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N.Y.



THE B & S #55 SHAFTLESS BACKSTAND
features automatic tension and side register control; motor for raising and lowering mill roll arms, also motor for moving the arms to accommodate different width rolls. Entire working mechanism is totally enclosed.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.
Foreign Representative: CASTLE & OVERTON, INC., 630 Fifth Avenue, New York 20, N.Y.

BREVITY—Identify by IEN - 11630 If you write the maker

Increased Insulation

BETTER CONNECTIONS

JONES BARRIER TERMINAL STRIPS

Leakage path is increased—direct shorts from frayed terminal wires prevented by bakelite barriers placed between terminals. Binder screws and terminals brass, nickel-plated. Insulation, black molded bakelite. Finest construction. Add much to equipment's effect.

Jones Means Proven Quality

Illustrated: Screw Terminals—Screw and Solder Terminals—Screw Terminal above Panel with Solder Terminal below. Every type of connection.

Six series meet every requirement: No. 140, 5-40 screws; No. 141, 6-32 screws; No. 142, 8-32 screws; No. 150, 10-32 screws; No. 151, 12-32 screws; No. 152, ¼-28 screws.

Catalog No. 18 lists complete line of Barrier Strips, and other Jones Electrical Connecting Devices. Send for your copy.

Send for complete data on this new basic improvement!

HOWARD B. JONES DIVISION

BREVITY—Identify by IEN - 11631 If you write the maker

MYVASEAL*

gasketing material —for **high vacuum**

HERE'S something different—a synthetic elastomer that's tough and has a very low vapor pressure.

In the ports of electron tube exhaust machines, Myvaseal Gasketing Material results in longer-lasting tubes because its remarkably low vapor pressure means higher vacuum with less pumping.

The newest television picture-tube pumping systems and rotary exhaust systems are being built with it. Older equipment can benefit from it. And users of other high vacuum systems, small and very large, are turning to Myvaseal Gasketing Material.

This new product is just another example of DPi's research in the interests of those who work with high vacuum.

Whatever your need in that field, let our technical staff serve you. Write to *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N.Y. (Division of Eastman Kodak Co.).

*Trade-mark

DPi

high vacuum research and engineering

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 11633 If you write the maker

PRESS . . Hand operated for instrument, small parts production

Source: METALIX MFG. CO.
29 Fitch St., Norwalk, Conn.

Micro Press is a new hand-operated unit measuring 6 in. in height, 2½ in. in width, 3 in. in depth without the operating lever. It is designed for light-duty precision operation in broaching, forming, marking, piercing, punching, reaming, riveting, staking. Tools are guided by an adjustable cross arm mounted on a tool-steel column. A hardened ground and lapped tool-steel guide bushing in the cross arm provides for tool alignment in operation.

The fixture plate mounted on the base is hardened and lapped for accuracy and contains 21 holes ranging from 0.013 to 0.185 in. in diameter. Clearance between the fixture plate and cross arm is adjustable to 1¼ inches. List price is $45, without a depth stop or power attachment.

BREVITY—Identify by IEN - 11634 If you write the maker

METAL TREATING . . Liquid material forms phosphate paint base on steel

Source: RUSTICIDE PRODUCTS CO.
3123-25 Perkins Ave., Cleveland 14, Ohio

Ready to use as supplied

Ospho trade names a new chemical that will change iron oxide to iron phosphate, an inert hard dark-gray substance. Application on a rusting surface stops the action and produces a surface to which paint will cling tightly and through which moisture and oxygen cannot penetrate. Coating the liquid on clean steel etches the steel to provide an excellent base for paint applied as a surface finish.

BREVITY—Identify by IEN - 11635 If you write the maker

CLEANING . . Washing machine circulates solvent through brush

Source: GRAYMILLS CORP.
2004-8 Ridge Ave., Evanston, Ill.

To soak, flood, brush

Motor-driven pump circulates cleaning solvent from a 20 by 20 by 4-in. tank through a length of tube and a hollow-handle brush to clean work pieces positioned on a screen on the tank top. Additional and independent cleaning action is provided by a dip basket and a soak tank at the rear measuring 13¾ by 7 by 9 inches. The equipment is designed to employ the company's Agitene solvent. List price is $49.50. A 5-gal. container of the solvent adds $6.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11636 If you write the maker

*CONTINENTAL

FENCE

MADE OF KONIK STEEL

Peace-of-Mind PROPERTY PROTECTION

Enjoy the peace-of-mind protection you get with Continental fence . . . the only fence made of KONIK steel. KONIK is an open hearth alloy steel with copper, nickel, and chromium added for extra strength and extra resistance to rust and corrosion. Write Continental or see our nearest representative for complete information on Continental fence.

*Due to present National Defense requirements for nickel and chromium, the critical war materials, Continental fence will not be available in "Konik" steel for the duration of this emergency.

*Trade Mark Reg. U.S. Pat. Off.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana

Please send FREE copy of "Planned Protection"—complete manual on property protection.

Name_____
Address_____
City_____ State_____

PLANNED PROTECTION — CONTINENTAL STEEL FENCE

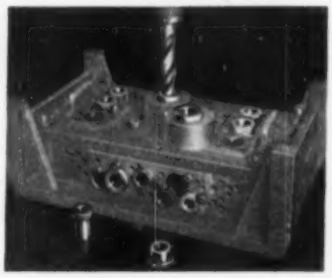
CONTINENTAL STEEL

CONTINENTAL STEEL CORPORATION

BREVITY—Identify by IEN - 11637 If you write the maker

EX-CELL-O BUSHINGS

On the Job!



Shown above is a jig illustrating the use of Ex-Cell-O Drill Jig Bushings. Note the various types—headless press fit, head type press fit, and slip renewable bushings—three of the many types carried in stock and described and pictured in Ex-Cell-O's bushing catalog—yours for the asking—Bulletin 35371.

XLO

51-29

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

BREVITY—Identify by IEN - 11638 If you write the maker

Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Moguletric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Moguletric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 11639 If you write the maker

Here's a glass that is three to five times stronger than plate glass in sustaining loads or resisting strain—five to seven times stronger in resisting impact—over three times as resistant to thermal shock. Imagine—no damage when molten lead is poured on it, even when it's resting on ice! This glass, strengthened by a Libbey-Owens-Ford scientific heat-treating process, is TUF-FLEX*, available in eight thicknesses, from ¼" to 1¼". Complete details in Bulletin SPD-51.

Write for your copy of this valuable booklet.

*®

LOF GLASS

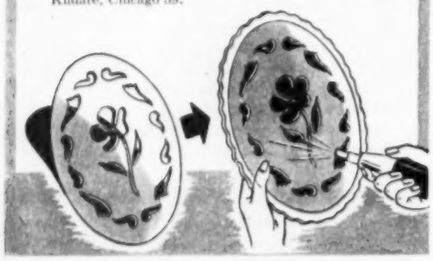
LIBBEY·OWENS·FORD GLASS COMPANY
86111 NICHOLAS BLDG.
TOLEDO 3, OHIO

BREVITY—Identify by IEN - 11640 if you write the maker

MYSTIK Sand Blast

More Accurate, Faster, Lower Cost

A self-stik masking material for sandblasting designs, decorations, lettering, trademarks on glass, mirrors, metals, ceramics, plastics, showcases, etc. Stands heavy blasting up to ¼" in depth. Simply press Sand Blast stencil in place, remove stencil ties for unbroken letters. May be die-cut to any required design. Perfect accuracy with production line speed. Available die-cut or in rolls of blank stock up to 36" x 30 yards inclusive, also in sheets. Write for information and free samples. Mystik Adhesive Products, 2644 N. Kildare, Chicago 39.



BREVITY—Identify by IEN - 11641 if you write the maker

"Nearest Thing to an Everlasting Floor!"

SAYS ONE FACTORY MANAGER*

Floors of EMERI-CRETE

made with CORTLAND EMERY AGGREGATE

End Floor Maintenance for Years

For use on new floors or resurfacing old ones, wherever floors take a beating or maintenance costs are a headache! Applies as easily as ordinary concrete and outwears it many times over. Resists the effects of practically every processing material as well as extreme heat and cold. Even, non-skid surface prevents accidents.

Records of hundreds of EMERI-CRETE FLOORS, made with CORTLAND EMERY AGGREGATE, show that they have all but eliminated maintenance costs. EMERI-CRETE, made with CORTLAND EMERY AGGREGATE, is 100% natural crushed emery, cement and water. It bonds to the underlying concrete slab to form a hard "armor plate" that is practically immune to wear—the world's toughest floor . . . and the cheapest, on a year-in, year-out basis.

*Name on request

• DON'T SPEND ANOTHER DOLLAR ON FLOOR MAINTENANCE UNTIL YOU HAVE THE FACTS ON EMERI-CRETE, made with CORTLAND EMERY AGGREGATE

WALTER MAGUIRE COMPANY, INC., DEPT. IEN
60 E. 42nd Street, New York 17, N. Y.

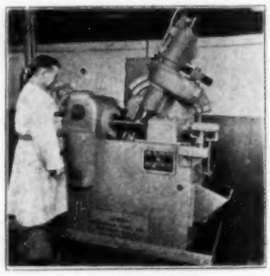
☐ Please send detailed bulletin on EMERI-CRETE, made with CORTLAND EMERY AGGREGATE
☐ Have representative make floor survey.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 11643 if you write the maker

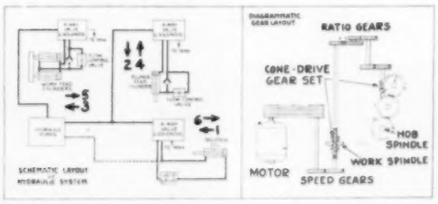
GEAR CUTTING . . Hobbing machine operates in automatic high speed cycle

Source: MICHIGAN TOOL CO.
7169-73 E. McNichols Road, Detroit 12, Mich.



The operator of this new No. 1458 gear-hobbing machine places a work piece or assembly in or on the headstock spindle and pushes a button to start the automatic cycle. The tailstock center moves into place under hydraulic pressure and the hob and work spindle start rotating in timed relation. At the same instant the hob spindle column moves forward horizontally so the hob plunge-cuts into the work. When proper depth has been reached this feed stops and the work immediately starts to traverse across the hob until it has passed the center line.

At this point the hob spindle retracts, the work returns to loading position, spindle rotation stops, tail center retracts and the work is released for removal and placement of a new blank. The complete cycle requires 58 sec. in hobbing a helical gear with 22 teeth, 2 in. face width and 3⅛ in. diameter of SAE-5130 steel. The hob was a three-thread high-speed-steel unit operating at 1,000 rpm. or 290 fpm. with 0.125 in. of feed per revolution. The work steel ranged from 170 to 207 in Brinell hardness. A total of 265 gears were obtained per sharpening of the hob.



Drive is by a 15-hp. motor through gearing as indicated in the layout. Tailstock movement and feed movements are by hydraulic pressure. The complete machine is designed to minimize vibration and torsion as well as backlash in the driving elements. Quality of the work produced meets the requirements in high speed production prior to a final shaving operation. Limiting factor in set up is change over of the helical cam guide that controls accuracy of the lead when cutting helical gears. This operation requires about 20 minutes.

The machine is designed to take gears from 2⅛ to 8 in. in diameter with maximum face width at 4¾ inches. Maximum hob measures 7 in. in length and diameter. It is minimum at 2½ inches. Floor space measures 84 by 84 inches. Weight is 21,000 pounds. Hydraulic and gear layouts are shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
All products and services are listed on page 118

BREVITY—Identify by IEN - 11644 if you write the maker

TRABON LUBRICATING EQUIPMENT

Delivers a Measured Amount of Lubricant

- To Any Bearing . . .
- In Any Location . . .
- Under Any Condition

In the plant of Cans, Inc., Chicago, a Trabon system services 221 points of lubrication on this machine, which produces 310 cans per minute!

Since 1930 Trabon has been engineering, manufacturing, and installing centralized lubricating systems . . . for plain bearings, roller bearings, and ball bearings . . .

Since 1922 Trabon has been helping industry solve its lubricating and bearing problems.

Call Trabon in regard to your lubrication requirements.

Trabon
OIL AND GREASE SYSTEMS

TRABON ENGINEERING CORP.
1814 East 40th Street
Cleveland 3, Ohio

BREVITY—Identify by IEN - 11645 if you write the maker

BINKS DP* SPRAY PAINTING UNIT

Giant BUY among small painting units

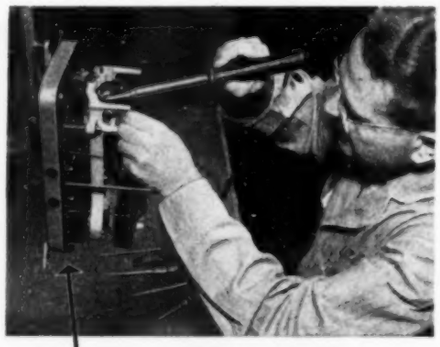
Binks Model DP portable spray outfit saves time and labor on maintenance painting, on touch-up and repair work and even on production finishing in small plants. Produces a steady pulseless flow of air at 40 psi—in ample volume for fast, quality finishing. It's rugged—stands up under constant use. It's available with 8 different gun, hose and cup combinations—for electric or gasoline operation.

*DP means Direct-drive piston

Write today for Bulletin 601 for full details.

Binks MANUFACTURING COMPANY
3120-34 W. Carroll Ave., Chicago 12, Ill.

BREVITY—Identify by IEN - 11646 if you write the maker



from INSTRUMENTS to ARMATURES

American Beauty

SOLDERING IRONS for PRODUCTION JOBS LARGE or SMALL!

WRITE FOR DESCRIPTIVE CATALOG PAGES.

dependable · durable · efficient · since 1894

AMERICAN ELECTRICAL HEATER CO.
DETROIT 3, MICH.

BREVITY—Identify by IEN - 11648 If you write the maker

You Can't Beat
FORCE
DRI-FLO
WRITING IMPLEMENTS

MODEL 57

ALL-PURPOSE
STENCIL AND MARKER BRUSHES
Fountain-type construction for trouble-free operation. Available with round, square, chisel or cube nibs. Instant dry or opaque models.

Send for Catalog D

THREE QUARTERS OF A CENTURY'S SERVICE

WM. A. FORCE & COMPANY, INCORPORATED
64 WHITE STREET, NEW YORK 13, N. Y.
The FORCE of NUMBERS

BREVITY—Identify by IEN - 11649 If you write the maker

CAN WE SERVE YOU

We make
PRECISION PAPER PRODUCTS
at a saving to Industry

CONE SHAPES
- SIZES: 1" to 30" lengths
- TAPERS: 45" to 44°
- TOPS: Straight—round—open—closed
- FINISHES: Smooth—rough—ground—flocked

Cones may be impregnated for strength, toughness and waterproofed. They can also be perforated, printed, colored, lacquer tipped, scored, covered with novelty wraps and made with inside liners of cellulose, plastic, glassine, paper. We make cone shaped containers.

SPOOL SHAPES

Paper spools are made any normal size and with varied constructions to include treated fibre heads, various size barrels in length and diameter, with wooden, paper and metal bushings. Single head spools with tapered or flat molded paper base.

Our complete laboratory and engineering service will consider any problem

SONOCO PRODUCTS COMPANY
HARTSVILLE S. C. MYSTIC, CONN.

BREVITY—Identify by IEN - 11650 If you write the maker

- Pump Controls
- Duplex Pump Alternators
- High and Low Level Cutoffs
- High and Low Level Alarms
- Multi-level Signals
- Liquid Metering
- Special Controls and Panels

Write for 32 Page Catalog

CHARLES F. WARRICK CO.
1964 W. ELEVEN MILE RD.
BERKLEY, MICH.

Warrick
FLOATLESS
LIQUID LEVEL CONTROLS
ELECTRODE TYPE

BREVITY—Identify by IEN - 11651 If you write the maker

SIGNALING . . Flashing light, battery operated, weighs 8½ pounds

Source: HALEDY ELECTRONICS CO.
57 William St., Dept. IEN, New York 5, N. Y.

Lists about $60

Three batteries, each rating 90 volts, are connected in series to charge a condenser in this new portable signal unit. The condenser discharges at a rate established by a resistor setting to provide a sharp brilliant flash of light in repeating action from the cold-cathode tube that is enclosed in a Fresnel lens. The lens is available either clear or colored. A switch on the side of the housing starts and stops the action. A carrying handle at the top completes the assembly.

Blinky Model CS is the designation. Assembly is in an aluminum housing that measures 6 by 6½ by 10 in. in overall dimensions.

BREVITY—Identify by IEN - 11652 If you write the maker

WELDING . . AC, arc machine, transformer type, has 200 amp. rating

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.

Features easy arc starting

Model MCM is a new machine in the company's line of ac, arc-welding equipment. It is intended for production welding and for general maintenance. It is available for operation on 220-volt 60-cycle ac. It can be supplied for reconnection in the field to operate on 220, 440 or 550 volts.

Current range is 40 to 250 amps. on 30 per cent duty cycle. Two open-circuit ratings are 80 and 55 volts. An indicator reads the current setting. Assembly is in a skid-equipped cabinet measuring 18 by 18 by 32 inches. The machine will handle $\frac{1}{16}$ to ¼-in. electrodes.

BREVITY—Identify by IEN - 11653 If you write the maker

DRYING . . Fitted jar to dry and store laboratory samples

Source: BETHLEHEM APPARATUS CO.
823 Front St., Hellertown, Pa.

New design in the company's line of Dry-Jars, previously described IEN-9606-50, employs a metal tray to take crucibles of various sizes holding laboratory samples. At the bottom of the jar is space to add a liquid or dry desiccant. Overall dimensions are 3½ in. in diameter by 6⅝ in. in height. A screw-type cap prevents the lid from popping off when hot crucibles are placed inside.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11654 If you write the maker

Now you can fasten V-belts by using

ALLIGATOR
V-BELT FASTENERS

- Alligator V-Belt Fasteners and open-end (long length) V-belting in rolls will enable you to make up multiple V-belt drives for a wide variety of applications.

Available for B, C and D sizes of V-belting.
Not to be used for repairing endless cord V-belts.
Bulletin V-211 will give you complete details. A copy mailed on request.

Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4610 Lexington St., Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat conveyor and transmission belts and FLEXCO Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

BREVITY—Identify by IEN - 11655 If you write the maker

- To Centerless Grinder
- Single File
- In Oriented Position
- Automatically

SYNTRON
"Vibra-Flow"
PARTS FEEDERS

Let controlled vibration feed your small, medium or large parts . . . single file . . . in oriented position . . . at variable rates . . . without damage . . . to your presses and grinders and other automatic processing equipment.

Catalog data upon request. Or send details of your problem along with sample parts to . . .

SYNTRON CO.
410 Lexington
Homer City, Pa.

BREVITY—Identify by IEN - 11656 If you write the maker

How to get extra copies of blueprints —fast!

A case history based on the experiences of the American Brake Shoe Company, Kellogg Division, Rochester, N. Y.

The blueprints (and direct-process prints) submitted by customers placing machining orders used to be a problem for the Kellogg Division, American Brake Shoe Company.

Invariably, prompt delivery was requested. But . . . before production could begin in the shop, extra copies of each customer-print were needed. Being semi-opaque, these prints could not be used as "masters" in Kellogg's direct-process machine. How, then, could the extra copies be obtained in the shortest time . . . and at the lowest cost?

Kodagraph Autopositive Paper was the answer.

Now . . . extra copies are made quickly . . . economically.

With "Autopositive," Kellogg reproduces the blueprints, direct-process prints, and other types of "originals" *directly* . . . quickly obtains the print-making masters that are needed so urgently.

The operation is simple . . . is performed under ordinary room illumination. "Autopositive" is exposed in contact with the customer's print in Kellogg's direct-process machine. It is then processed in standard photographic solutions. The result is a sparkling, long-lasting photographic intermediate—dense blacks, clean whites—on a durable, evenly translucent paper base. Using this, the required number of extra copies can be turned out . . . at practical, uniform machine speeds.

Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction

Write for new free booklet, "Modern Drawing and Document Reproduction." It gives all the facts about revolutionary "Autopositive," which you, or your local blueprinter, can process quickly, economically.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

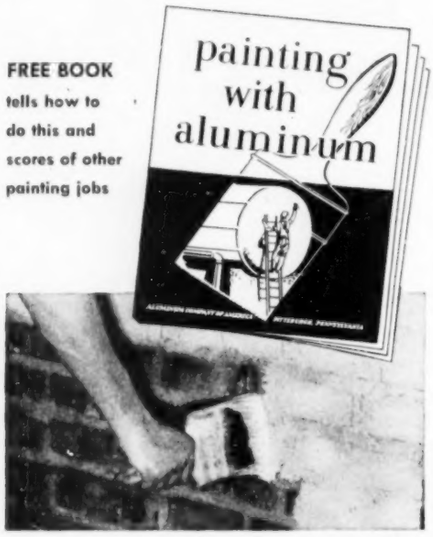
Kodak

BREVITY—Identify by IEN - 11658 if you write the maker

BREVITY—Identify by IEN - 11659 if you write the maker

How to brighten dark rooms with One Coat

FREE BOOK tells how to do this and scores of other painting jobs



31 PAGES OF USEFUL PAINTING INFORMATION

NEW FREE BOOK TELLS HOW to get better paint results at lower cost . . . how to buy and apply the right aluminum paints.

Alcoa does not make paint. We have prepared this book so you can know about the many new improvements in aluminum paints; can buy the correct paints without lengthy specifications and tests; can apply them best for lasting protection and good appearance.

This book gives worth-while maintenance painting tips; includes coverage tables, tells what aluminum paints to use inside and out, on wood, metal, masonry and heated surfaces. Send for your free copy. Attach the coupon to your letterhead and mail now.

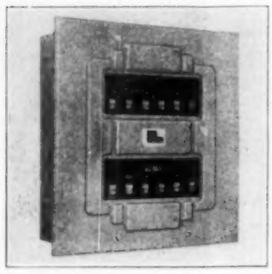
ALUMINUM COMPANY OF AMERICA
Paint Service Bureau, 1786-L Gulf Bldg., Pittsburgh 19, Pa.
Please send me a free copy of: *"Painting with Aluminum"*.
Name (Please print) _____
Address _____
City _____ State _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.
The RIGHT aluminum paint for this job is ALUMINUM METAL & MASONRY PAINT.
ALCOA ALBRON

BREVITY—Identify by IEN - 11661 if you write the maker

CIRCUIT BREAKER . . Panel assembly mounts breakers for 12 circuits

Source: MURRAY MFG. CO.
1248-52 Atlantic Ave., Dept. IEN, Brooklyn 16, N. Y.



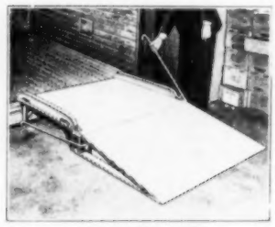
Standard assembly of this new "12" Circuit Protector consists of four 15-amp. circuit breakers plus two 20-amp. units and provision for 6 additional units. Six pairs of handle extensions are also supplied. The unit installs without requiring a main switch providing the number of operating handles is limited to size by extensions.

Overall dimensions are about 12½ by 11¼ by 3¾ in. for surface mounting. They are about 13¼ by 12½ by 3¾ in. for flush assembly. The individual breakers employ magnetic action. Service cannot be restored until a short circuit has been cleared from the line protected by the breaker.

BREVITY—Identify by IEN - 11662 if you write the maker

FLOORS . . Magnesium dock board in combination assembly with a ramp

Source: MAGLINE INC.
1930 Mercer St., Pinconning, Mich.



For loads to one ton

Trucks can back to within 3 in. of a dock when this new combination Magliner magnesium board and ramp is employed. The ramp compensates for extreme differences in elevation between the dock and a truck bed. The main two-part assembly employs the same design of locking hooks that drop into place over the edge of the dock as in the dockboard previously described IEN-9798-50. The board rides pins at the two upper corners of the ramp. It can be lifted from these pins to handle as a separate unit when required.

BREVITY—Identify by IEN - 11663 if you write the maker

MANAGEMENT . . Employee retirement plan based on deferred profit sharing outlined in booklet

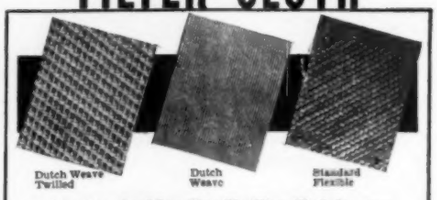
Wellington Fund
1418-22 Walnut St., Philadelphia 2, Pa.

Tax reduction through contributions to a qualified profit-sharing plan for employee retirement is listed in a table in new 18-page booklet. Title is "Use of Wellington Fund in Retirement Plans". The booklet describes essentials of a profit-sharing retirement plan, includes a sample outline, shows how the Fund can provide an investment program.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11664 if you write the maker

FILTER CLOTH



There's a Roebling Metallic Filter Cloth for your exact requirements

NO MATTER WHAT your filtering problems, you'll get maximum efficiency and top service economy with the *right* Roebling Metallic Filter Cloth. Roebling makes Filter Cloth from an exceptionally wide range of metals and alloys...in every practical weave and mesh. Those pictured above have the strength required for higher pressures or vacuum. They're smooth-woven and easy to clean; readily adaptable for nearly any type of filter.

Send for full information about Roebling Metallic Filter Cloth. And let us discuss you particular problems and furnish samples.

WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 11665 if you write the maker

WATSON-STILLMAN HYDRAULIC POWER TOOLS

HYDRAULIC JACKS

These sturdy units, with either independent or integral pumps, are useful for many jobs in construction and maintenance. Capacities from 20 to 500 tons.

HAND PUMPS

Single and double plunger types, with reservoirs of different capacities to suit the job, these hand pumps have a wide application for operating small hydraulic tools, jacks and other hydraulic equipment, and for general hydrostatic testing purposes.

PORTABLE PIPE BENDERS

Bends all standard, extra heavy and double extra heavy steel pipe from ⅜ in. to 2 in. inclusive, as well as standard weight pipe up to 3 in. diameter. Also handles solid mild steel bars up to 2 in. diameter.

WIRE ROPE SHEARS

W-S wire, cable and bar shears provide years of trouble-free general service. They are light and portable for convenient on-the-job use.

Write for Bulletin A-5

9-1-24

Distributor Products Division
WATSON-STILLMAN
ROSELLE, NEW JERSEY

BREVITY—Identify by IEN - 11666 if you write the maker

Protect As You Project Delicate Precision Parts

PACKAGE in Clearsite Plastic Selling Containers

Drills and tools, industrial jewels, taps and dies, screws, springs, nozzles, valves, fine machine parts, fishing tackle, electrical parts, and many, many others can be packaged for perfect visibility and the utmost in protection in the container that's featherlight (¼ the weight of glass) • shatterproof • flexible or rigid • permanently printed • clear or opaque in all colors • eventually a re-use container.

Write for your FREE copy of the new, fully illustrated brochure that points up the many uses and advantages of Clearsite Plastic SELLING Containers.

Clearsite is made only by
CELLUPLASTIC CORPORATION
32 Avenue L • Newark 5, New Jersey

Milwaukee • Los Angeles • Detroit • New Haven
Cleveland • Denver • Minneapolis • Cincinnati
Atlanta • Houston • Chicago • Jacksonville
Ft. Worth • St. Louis • San Francisco • Jackson
Richmond • Montreal • Toronto

AMERICA'S #1 SOURCE FOR PLASTIC CONTAINERS
ESTABLISHED 1919

BREVITY—Identify by IEN - 11668 If you write the maker

VALUE BONUS at no extra cost with the MARK-TIME two-speed BELL TIMER

first where quality counts

This exclusive, patented Mark-Time development permits use of the same timing unit for accurate, dependable timing of a 6 minute or 60 minute cycle.

Just shift the lever to change setting. The same dial is used for both cycles, thus providing fractional minute calibration for 6 minute operation.

2 hour — 12 minute timings also available.

Available in a wide variety of dials and knobs.

Write for further details and prices.

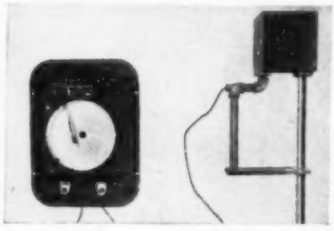
MARK-TIME 2100-SERIES TWO-SPEED BELL TIMER. Center Stud mounting only. May be supplied in plastic case.

In Canada send inquiries to: Ontario Hughes Owens Co. Ottawa, Ontario

M. H. RHODES, INC. HARTFORD, CONNECTICUT

BREVITY—Identify by IEN - 11669 If you write the maker

For Quality Control of Viscosity . . . Use the NORCROSS RECORDING-CONTROLLING VISCOMETERS



Viscosity Range: 1 to 200,000 c.p.

Applicable to Textiles, Plastics, Paper, Synthetics, Adhesives, Food Products, Petroleum, Syrups, Paints, Resins, Printing and Soap.

NORCROSS RECORDING-CONTROLLING VISCOMETERS

Can Be Used For:
Recording or automatic control;
Operation under pressure or vacuum;
Explosion proof applications.

Give You:
Greater Production — Improved Quality
Labor Savings — Lower Costs

Write for illustrated booklet

NORCROSS CORPORATION
247A Newtonville Avenue, Newton 58, Mass.

BREVITY—Identify by IEN - 11670 If you write the maker

BONDED TO METAL "DRY" LUBRICATION

Penetration: After sand-blasting, metal bar rubbed against surface brings Electrofilm Lubricant to surface.

SOLUTION TO EXTREME COLD AND HIGH TEMP. LUBRICATION PROBLEMS

Electrofilm built-in lubrication is recommended where oil or grease is not adequate. Solves lubrication headaches for valves, couplings, pumps, gears, hinges, etc. Has excellent oil retention properties for plus lubrication in gas engines, electric motors, etc.

• USED BY U. S. Navy, Air Force, Atomic Energy Comm. Aircraft Mfgrs., nationally known industries.

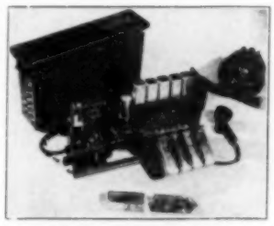
A few territories for custom processing plants and representatives available.

Electrofilm CORP.
7116 LAUREL CANYON BLVD., NORTH HOLLYWOOD, CALIF.

BREVITY—Identify by IEN - 11671 If you write the maker

COMMUNICATING . . Telephone transmits over plant power lines

Source: FARMERS ENGINEERING & MFG. CO. 547-51 Brushton Ave., Dept. E, Pittsburgh 21, Pa.



First employed in mines

New design in the company's Trolleyphone, previously described IEN 2234-47, now assembles its combination transmitter and receiver with ten component parts, each of which plugs as a unit into octal sockets in the housing. The arrangement makes servicing a matter of unit replacement requiring a minimum of technical knowledge. The complete set weighs 50 lb., including the housing with its equipment, a loudspeaker and a press-to-talk microphone. This is 30 lb. lighter than the original design.

One of the assemblies can be installed at a central position in a plant and others mounted on equipment such as cranes, ore bridges, charging and coke-oven machines, locomotives. Voice signals are carried on a frequency-modulated carrier current in the range of 100 kc. over the electric circuits already installed in the plant. These can be either ac. or dc. since the power characteristic of the current in the original circuit is not a factor. Signal output of the transmitter is about 50 watts. Communication can be maintained under normal conditions over distances of 3 to 4 miles.

BREVITY—Identify by IEN - 11672 If you write the maker

CONVEYING . . Steel link assembly forms belt to handle scrap from presses

Source: MAY-FRAN ENGINEERING INC. 1694 Clarkstone Road, Cleveland 12, Ohio

Scrap rides to a shear

New assembly of the company's steel-link conveyor employs link units measuring 36 in. in width by 6 in. in length. The assembled links ride over sprockets and present a carrying surface that is not subject to abrasion or cutting in contact with sharp pieces of scrap coming from punch presses. A typical installation measuring 236 ft. in overall length between the end sprockets is employed beside a line of nine punch presses to handle scrap to a shear.

The links are joined by steel rods and the side chains that ride the sprockets become an integral part of the assembly. Interlocking wings remain engaged when the belt is traveling from one level to another or over the sprockets. The links can be supplied in perforated design so coolant can flow through.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11673 If you write the maker

FLORITE Direct-Reading AIR VELOCITY METER

Available in Two Styles —See Below

- *A practical, accurate air velocity meter for heating, air conditioning, and ventilating work. Indispensable for measuring grille velocities and air deliveries from registers and grilles; for balancing forced air heating systems, and for checking air distribution of all kinds of ventilating systems.*
- *Accurate velocity readings, automatically averaged over a 3" dia. free area, instantly indicated in feet per minute.*
- *Extension handle facilitates positioning of instrument away from the observer for readings in hard-to-reach locations, or where the observer's body would interfere with the normal air movement.*
- *Unique scale lock makes possible to retain scale reading when desired until the lock is released—an indispensable feature where extension rod is used to position instrument away from the observer.*
- *Leather case is furnished as standard equipment for added protection when the instrument is not in use and for convenience when carrying it in the pocket.*

Either of two styles: One with a scale of 0-1000 ft./min., and the other with a double scale of 0-3000 ft./min. and 0-35 miles per hour.

Write for Leaflet 760

BACHARACH Industrial Instrument Co.
7000 BENNETT STREET • • PITTSBURGH 8, PA.

BREVITY—Identify by IEN - 11674 If you write the maker

IMPROVE YOUR PRODUCTS AT LOW COST

FREE
Write for a copy of this information packed folder—D-71.

You can improve your products and equipment, give them corrosion resistance and minimize use of critical materials by designing your products around PERMACLAD. Get complete information today.

For Better Products at Low Cost—Specify PERMACLAD

PERMACLAD STAINLESS CLAD STEEL

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.
125 Years of Iron and Steel Making Experience

Other Products:
A. W. ALGRIP Abrasive Floor Plate • A. W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

BREVITY—Identify by IEN - 11675 If you write the maker

You gotta ~~see~~ use it to believe it!

SUPER speed spiral MASONRY DRILL

CARBIDE TIPPED

FASTER—STRONGER—LESS BREAKAGE!
You haven't used a real drill till you've tried this one with built-in double dust channels that whip the dust out immediately and permit drilling even deep holes without a stop.

All sizes • In kits and singly

ASK YOUR DEALER OR WRITE

Super TOOL COMPANY
21650 Hoover Rd.
Detroit 13, Mich.

BREVITY—Identify by IEN - 11676 If you write the maker

Buy the right HYSTER 20 for your particular job

6 variations of one basic model

1) **3000 lbs.** capacity at 15" load centers (Standard Hyster 20)
2) **2000 lbs.** capacity at 24" load centers (Optional additional counterweight added to Standard 20)
3) **1300 lbs.** capacity at 15" load centers (Skeleton counterweight)
4) **1000 lbs.** capacity at 24" load centers (Skeleton counterweight)
5) **3000 lbs.** capacity at 15" load centers (Skeleton counterweight plus optional additional counterweight)
6) **1500 lbs.** capacity at 24" load centers (Skeleton counterweight plus optional additional counterweight)

Additional optional counterweights can be installed in less than 30 minutes; removed in much less time. See your Hyster dealer for further information.

Why carry around extra weight?
The lightweight but heavy duty Hyster 20 (No. 3 and 4 left) with skeleton counterweight weighs 600 lbs. less than the standard Model 20 (No. 1 left). It will cut maintenance and operating costs when loads are in the 1000 lb. range, and is of great importance where floor load limits exist, where elevator lifting capacities are material handling factors.

HYSTER COMPANY

THREE FACTORIES
2916 N. E. Clackamas St., Portland 8, Oregon
1816 North Adams Street.... Peoria 1, Illinois
1016 Meyers Street..... Danville, Illinois

BREVITY—Identify by IEN - 11677 if you write the maker

Money Saving BALL BEARING DEVELOPMENT

Improved machine design, performance and longer service life at low cost is made possible by this unique Fafnir Ball Bearing Unit incorporating the famous Fafnir Wide Inner Ring Ball Bearing with self-locking collar. It eliminates costly machining where bearings are involved. Makes maintenance easier.

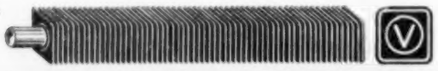
The FAFNIR FLANGETTE — for slow speed applications

1 *a completely-packaged ball bearing*
2 *easy to install — self bligning at assembly*
3 *lightweight, compact, sturdy*
4 *bearing protected by Mechanisseals (keep grease in, contaminants out)*

Get complete details. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 11678 if you write the maker



VULCAN HAS NO EQUAL

IN QUALITY CONSTRUCTION

All steel units *guaranteed* for 450 PSI and to be fabricated from seamless steel pressure tube A.S.T.M. Spec. A-83.

Fins, imbedded by special Vulcan process become integral with tube, insuring better heat transfer . . . are *guaranteed* to remain tight under conventional operating conditions.

IN EASE OF INSTALLATION

Vulcan is light in weight, easy to handle on the job . . . requires few fittings and supports . . . comes cut to desired length.

IN APPEARANCE

Neatly designed front covers, corner and end pieces for complete modern looking, dependable operating installation.

SEND TODAY FOR ILLUSTRATED BULLETIN

FOR 25 YEARS A LEADER IN FIN-TUBE RADIATION

THE VULCAN RADIATOR CO.
26 FRANCIS AVENUE, HARTFORD 6, CONN.

BREVITY—Identify by IEN - 11679 if you write the maker

INCREASES TAP LIFE

by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

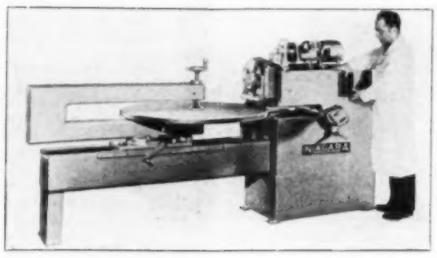
$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2734 E. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 11680 if you write the maker

SHEARING . . Roll type machine cuts 8 gage mild steel, also flanges

Source: NIAGARA MACHINE & TOOL WORKS
635-39 Northland Ave., Buffalo 11, N. Y.

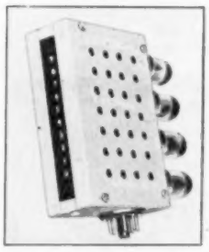


Disc capacity is 8 to 58 in. in diameter in production from square blanks in mild steel to 8 gage or stainless steel to 12 gage with this new motor-driven machine and work-holding head. Discs can be cut to 75½ in. in diameter from octagonal blanks. The machine also sets up as a flanger with flange height to 1½ inches. In this operation the upper roll is moved down by power at an adjustable feed to suit diameter and thickness of the work. Standard flanging rolls form a radius at the root of the flange measuring ⅜ inch. Head diameters from 18½ to 73½ in. can be flanged.

BREVITY—Identify by IEN - 11681 if you write the maker

COUNTING . . Electronic decade totals pulses to 300,000 per second

Source: DETECTRON CO.
5633 Cahuenga Blvd., North Hollywood, Calif.



Connects to octal socket

Model TU-9 is a new plug-in design of decade counter employing four tubes in the counting circuit. Overall dimensions are 1½ by 5 by 5½ in. including the tubes. Input and output pulse is 100 volts negative. Operation is on 200 to 400-volt dc. at 12 ma. from a suitable source. Each unit weighs 10 oz. and lists at $53. Any number can be cascaded and operated from one to the next for any required total. Decimal Totalizer is the designation.

BREVITY—Identify by IEN - 11682 if you write the maker

INSULATING . . Wall chart includes gage to select size of tubing or sleeving to insulate wire

Insulation Manufacturers Corp.
563-67 W. Washington Blvd., Chicago 6, Ill.

"Dieflex Selector" is an 8½ by 11-in. wall card to which is secured a metal gage with openings numbered from 24 to ½ inch. The gage indicates the correct size of insulating tubing or sleeving to use for the size of electric wire that can be inserted into a given opening. The card carries seven samples to show the range of materials, grades and colors available. It is printed with detail descriptions. List price is $1.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

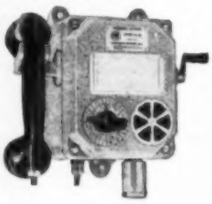
BREVITY—Identify by IEN - 11683 if you write the maker

U.S.I. SOUND POWERED
assures dependable communication

"BOMBS AWAY"
(in enemy language)

Could mean no communication in your plant . . . Any communication system depending upon outside power supply is unusually vulnerable.

Investigate the permanent, or emergency, systems offered through U. S. I. sound powered telephones.



WRITE FOR CATALOG DEPT. L

UNITED STATES INSTRUMENT CORPORATION
SUMMIT • • • NEW JERSEY

BREVITY—Identify by IEN - 11684 if you write the maker

NOW A *Dual-Capacity* BURNER
(Infra-red . . . gas-fired)

Gives additional speed-up to your heat-processing operations. From room temperature to 2600° F. with no warm-up period or appreciable lag! Accurately maintains any temperature within its working range. Refractory of new design provides an unobstructed, larger radiant incandescent surface . . . emitting an exceptionally high percentage of infra-red electro-magnetic waves. No center dead; no hot spots. Carbomatic Dual-Capacity is the most modern of infra-red burners—for the most economical, efficient, up-to-date heating technique . . . adapted to exacting process heat applications in many industries.

Also provides an effective incinerator of smoke and odors.

Write for Bulletin N-11

CARBOMATIC CORPORATION • Pioneer Mfrs. of Infra-Red Heat Generators
24-01 47th Street Long Island City 3, N. Y.
MEMBER A.G.A.

CARBOMATIC INFRA-RED
GAS-FIRED • ELECTRIC • OIL-CONVERSION-FIRED

BREVITY—Identify by IEN - 11685 if you write the maker

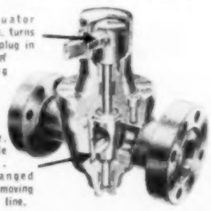
"at last—a valve that fills all our requirements"

Cameron
NON-LUBRICATED
LIFT-PLUG VALVE

These valves are credited with outstanding performance in such extremely severe services as: highly corrosive chemicals (HF and H_2SO_4) in refinery alkylation units; a process plant operating at 1600 degrees F. and at practically absolute vacuum; a producing oil well where it was required to operate daily at 6500 lbs. pressure. Obviously, with a good record on these services, the Cameron Non-Lubricated Lift-Plug Valve fills run-of-the-mill valve requirements in a walk.

The novel mechanical features of this valve include a separate and renewable seat which permits any desired trim for special services and facilitates repairs without removing the valve from the line. Being non-lubricated, it requires no periodic attention and saves maintenance expense. Also, this feature is particularly desirable in a wide range of services, from food processing plants to aviation gasoline refineries, where it is essential to keep valve lubricants out of the line product.

Send today for a copy of the Cameron Valve Catalog. It tells the complete story of this truly remarkable valve.



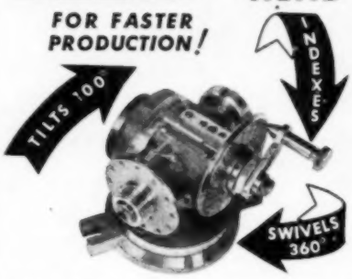
Cameron **IRON WORKS, INC.**
P. O. BOX 1212, HOUSTON, TEXAS

Export: 74 Trinity Place, New York, N. Y. Represented in the sterling area by: British Oilfield Equipment Co., Ltd., Duke's Court, St. James' s, London S.W.1. Eng.

BREVITY—Identify by IEN - 11687 If you write the maker

THE *unusual* **ELLIS** DIVIDING HEAD

FOR FASTER PRODUCTION!

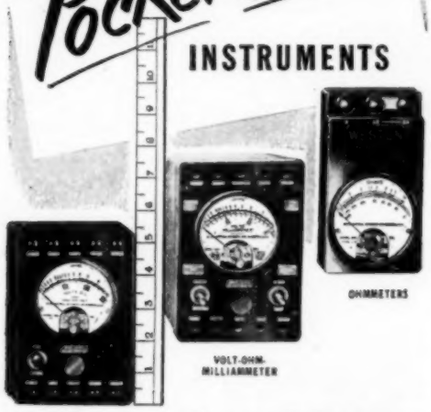


"Versatile" is the word for the unusual Ellis Dividing Head. This beautifully designed and built unit can extend the profit and production possibilities of your mills, grinders, drill presses and jig borers. It has 6½" swing, or 11" swing when used with riser blocks. Its fully universal action provides every needed setting, so that most work can be completed without rehandling. Work may be held between centers, or in chucks or collets. Write for catalog giving complete details!

NICHOLS-MORRIS CORPORATION
50-W CHURCH STREET, NEW YORK 7, N. Y.

BREVITY—Identify by IEN - 11688 If you write the maker

VERSATILE *Pocket Size* INSTRUMENTS



—for maintenance

—for product testing

Extremely compact, yet packed with values for broad flexibility in service, these popular WESTON testers are favorites for checking electrical components . . . for production line testing . . . and for final inspections. Ideal for maintenance, too, because they offer true WESTON dependability and ruggedness in convenient size. Available now in limited quantities through your local WESTON representative, or, WESTON Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey.

VOLT-OHMMETER—MODEL 564
Ranges—3/30/300/600 volts d-c (1000 ohms per volt).
Resistance—Full scale 1000/10,000/100,000/1,000,000 ohms.

VOLT-OHM-MILLIAMMETER—MODEL 697
Ranges—0-7.5/15/150/750 a-c and d-c (1000 ohms per volt).
Current—0-7.5/75 milliamperes d-c.
Resistance—Full scale 5000/500,000 ohms. Center scale 35/3500.

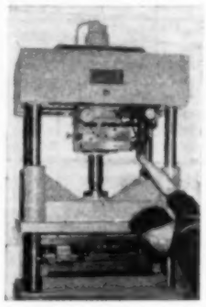
OHMMETERS—MODEL 605
Ranges—Type 1-E—double range 0-5000 and 50,000 ohms, full scale.
Type 1-F—double range 0-10 and 0-1000 ohms, full scale.

WESTON *Instruments*

BREVITY—Identify by IEN - 11690 If you write the maker

PRESS . . Hydraulic machine for tryout and limited production use

Source: DAKE ENGINE CO.
614 Seventh St., Grand Haven, Mich.



Capacities range from 25 to 125 ton in single and double-acting design in the company's new line of hydraulic tryout presses. Each press is powered by a hydraulic mechanism operated by an electric motor or an air cylinder, the latter designed for operation at 90 to 145-lb. pressure. The single-acting designs are powered on the up-stroke with return to starting position by gravity. The double-acting assemblies are powered on both up and down strokes and are equipped for rapid advance to the loading point where changeover is automatic to power advance for the remainder of the stroke.

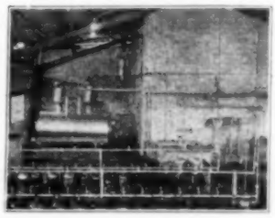
Distance between uprights, left to right, is 25 to 62 in. and front to back is 15 to 25 inches. Maximum daylight opening is 10 or 15 inches. Shut height is 2 or 2½ inches. Stroke is through 8 in. on three of the machines, 12½ in. on the fourth, all in single-acting design.

The double acting presses range from 25 to 48 in. in platen width, from 15 to 25 in. in depth. They provide 17 or 20 in. in daylight opening and 3 or 6 in. in shut height. Illustrations, brief data and specifications are contained in a new 4-page bulletin, "Dake Die Try-Out Presses".

BREVITY—Identify by IEN - 11691 If you write the maker

GENERATOR . . Makes acetylene gas and compresses it into cylinders

Source: SIGHT FEED GENERATOR CO.
East 3rd St., Dept. 38, West Alexandria, Ohio



Capacity ranges from 240 to 3,000 cfh. for this new assembly of the company's Model-A-Twin continuous-flow acetylene generator with a compressor and associated equipment to deliver acetylene gas into cylinders at 300-lb. pressure. The equipment eliminates need for the usual gas holder. It also can be employed to supply the gas directly in installations requiring it steadily in considerable quantities.

Operation starts with the carbide supply in a hopper above the generator. The gas issuing from the generator passes through a cooler-condenser and a purifier to reach the compressor. The high-pressure delivery moves to a drier consisting of two oil-purging and one drying cylinder to remove oil and moisture. From there it moves through a manifold to the high pressure cylinders. Complete equipment incldes accessory units to safeguard and control the operation.

The equipment is described and illustrated with a tabulation and specifications for the six sizes making up the line in a new 6-page folder, "Sight Feed Acetylene Compressing Plants."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11692 If you write the maker

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS · OILS · POWDERS · PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 Pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

BREVITY—Identify by IEN - 11693 If you write the maker

Pays 400% per year

Saves $11,549 annually—in lower scrap losses, faster production

®*MULTIPRESS* brings typical gains at Penn Electric Switch Co., Goshen, Ind.

THE JOB—Staking five metal parts on a bakelite base, with a single ram stroke, to form the magnetic switch shown above.

THE RESULTS—1. Production speed almost doubled. 2. Scrap losses 84% lower. 3. Two types of switches staked in continuous 5 to 1 ratio, without tooling changes. 4. Quality of product *uniformly* higher. 5. "Chasing" threads on staked parts no longer necessary. 6. Work hazards eliminated. 7. Operators like the quieter, smoother action of Multipress. 8. Total saving: $11,549.00 *per year* on a $4000 Multipress setup.

If you are interested in gains like these, for almost any job in the "pressing" field, send now for full details on the fast, versatile, oil-hydraulic Multipress. 8 frame sizes; one to 50-ton capacities. Write today!

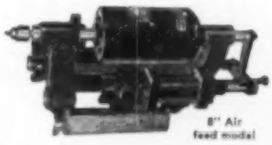
DENISON HydrOil ics

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, O.

BREVITY—Identify by IEN - 11694 If you write the maker

Precision Hi-Speed Drilling in Metal, Wood, Plastic or Composition—.004"-.156".

Check These 9 Features



- Fingertip variable speed
- Fast approach air feed
- Hydraulic feed control
- Electric or manual controls
- Deep hole drill cleaning
- Sensitive precision spindle
- 1000-10,000, 2500-15,000 RPM
- Can be mounted at any angle, with hand or power feed
- Price 8" model, hand feed, from $130.00. Air feed model (as shown) from $238.50.

Write for helpful bulletin

The ELECTRO-MECHANO CO.
267 E. ERIE ST., MILWAUKEE 2, WISCONSIN

BREVITY—Identify by IEN - 11695 If you write the maker

SHENANGO *Centrifugal* CASTINGS ... KEY TO SAVINGS

Typical of some of the larger parts cast centrifugally and precisely finished at Shenango, this a 45" cylinder bushing for use in a big hydraulic metal forming press.

CENTRIFUGALLY CAST BY SHENANGO . . .

for a longer life under pressure

THERE's a way to save money on symmetrical parts. Do as many companies do—turn to Shenango for *centrifugally* cast parts or assemblies . . . large or small . . . ferrous or non-ferrous . . . semi-machined or precisely finished to specification.

You'll gain by the most advanced techniques. Metal for metal you get greater strength and better resistance to wear, to say nothing of relief from sand inclusions, blow holes and other defects.

GET ALL THE FACTS. Send for Bulletin No. 150 on non-ferrous parts. Bulletin No. 151 covering parts of Meehanite Metal, Ni-Resist and special alloy irons.

SHENANGO-PENN MOLD COMPANY
790 West Third St. Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
ALL RED BRONZES · MANGANESE BRONZES · ALUMINUM BRONZES
MONEL METAL · NI-RESIST · MEEHANITE METAL

BREVITY—Identify by IEN - 11696 If you write the maker

reduce WEAR, NOISE and VIBRATION in YOUR products...

with Quadriga® CUSTOM-FABRICATED

SPECIAL WASHERS and STAMPINGS

Quadriga washers and stampings are made to your *precise* specifications — to fit your particular needs. We'll quickly supply you with any quantity of flat washers; tension, spring, formed, drawn, cupped or finishing washers of any washer material. Also, stampings of any material in any design. Press capacity to 150 tons, depth of draw to 4". We build dies. Send B/P, samples, or data today for a prompt estimate.

Write now for free technical catalog with valuable washer and stamping information.

THE QUADRIGA MANUFACTURING CO.

215-A West Grand Avenue Chicago 10, Illinois

BREVITY—Identify by IEN - 11697 If you write the maker

LET'S GO TO WORK ON YOUR LIQUID HANDLING PROBLEMS

FOR FAST FILLING OF OIL CANS

FOR SAFE . . . CLEAN . . SPACE-SAVING . . . MEASURED LIQUID HANDLING

FOR RAPID MACHINE SUMP FILLING AND DRAINING

• Bowser liquid handling engineers are trained to analyze the operations of your plant objectively and suggest cost-reducing changes. There is one in your vicinity who will gladly make this study for you without obligation. May he call?

Mail the coupon for prompt action.

LIQUID CONTROL SPECIALISTS SINCE 1885

BOWSER

MAIL TODAY

BOWSER, INC., 1338 Creighton Ave., Fort Wayne 2, Ind.
Have your liquid handling engineer contact us.

NAME

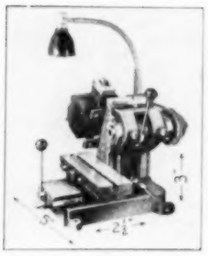
COMPANY

ADDRESS

BREVITY—Identify by IEN - 11699 If you write the maker

MILLING . . Bench type machine, motor driven spindle, 4 by 12 in. table

Source: BARKER ENGINEERING CO.
502 Green Road, Cleveland 21, Ohio



No unneeded frills

Hand levers for production application or micrometer screws for tool room use are provided for the hand-operated movement of the table through a longitudinal travel of 5 in., of the saddle through 2½ in. and of the head through 3 in. on this new milling machine. It has been designed for a variety of work. It permits the use of relatively unskilled labor after it has been tooled for a given production job.

Drive is by a ¼-hp. motor with belt connection for three spindle speeds of 875, 1,750 and 3,500 rpm. The spindle is made of nickel steel hardened and ground and mounted on precision ball and roller bearings. It takes standard collets from $\frac{1}{16}$ to ½ inch. Clearance hole in the collet draw tube will take ½ in. stock. Height is 15 inches. Weight is 152 pounds.

BREVITY—Identify by IEN - 11700 If you write the maker

FURNITURE . . Steel bench equipped with plastic-wood top

Source: NATKIN & CO.
1603 S. Hanley Road, St. Louis 17, Mo.

Scotty trade names a new steel work bench that can be specified with a steel top or with the company's Nat-Flex laminated wood-plastic surface top which acts as a non-conductor, deadens sound and minimizes vibration. The assembly includes a steel storage shelf. The design provides adequate toe space at the front. Finish is in two coats of baked enamel. The bench is shipped knocked down. Bolts are supplied for assembly on the job. Overall dimensions are 60 by 24 by 33⅝ inches. Weight is 125 pounds.

BREVITY—Identify by IEN - 11701 If you write the maker

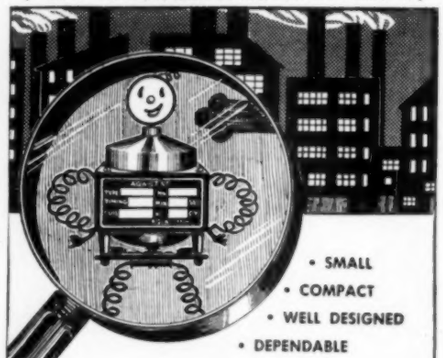
STEELS . . Book on stainless steel describes types, properties, selection, uses

Allegheny Ludlum Steel Corp.
2036-A Oliver Bldg., Pittsburgh 22, Pa.

New 120-page edition of the company's "Stainless Steel Handbook" is a cloth-bound volume available on request to qualified individuals. It deals with selection of stainless steels, types, analyses, treatment, heat-resistant and low-temperature properties, stainless and heat-resisting castings. A chapter on fabrication describes cutting, welding, soldering, brazing, drawing, forming, machining, hardening, surface treatment. At the back are 20 pages of tables.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11702 If you write the maker



• SMALL
• COMPACT
• WELL DESIGNED
• DEPENDABLE

AGASTAT TRADE-MARK
TIME DELAY RELAY
PROTECTS BIG INDUSTRY PROCESSES

AGA AIRPORT LIGHTING · AGA INDUSTRIAL PROCESS · AGA TURNPIKE REFLECTORS · AGA MARINE EQUIPMENT

Address inquiries to Special Products Division
American Gas Accumulator Company
1027 Newark Avenue, Elizabeth 3, New Jersey

BREVITY—Identify by IEN - 11703 If you write the maker

Get DRY AIR from your compressor!

WESTINGHOUSE TYPE "W" WATER-COOLED AFTERCOOLER

Easily installed . . . delivers *dry* compressed air for paint spray, laundry equipment, controls, dental laboratories and other applications. Central water-cooled core is high-efficiency spined copper tubing within 2½ O.D. steel tubing with brass header. Water connections at end, air connections at top, drains at bottom of headers. Drain cock or automatic drain valve optional. Three sizes . . . for 1½ and 2 HP, 3 and 5 HP, and 7½ and 10 HP compressors. Write for Bulletin 9460-21 and name of nearest distributor.

INDUSTRIAL PRODUCTS DIVISION WESTINGHOUSE AIR BRAKE COMPANY WILMERDING PENNA.

Factory Branch: Emeryville, Calif. • Distributors throughout the United States . . . Consult your Classified Directory • Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

BREVITY—Identify by IEN - 11704 If you write the maker

Whatever you want in Hose Fittings— your best bet is ALLENCO

NEW INSTALLATIONS • ADDITIONS • REPLACEMENTS

Clamps
Couplings
Nozzles
Fusible Plugs
Valves, etc.

ALLENCO

Proved by Performance in thousands of installations

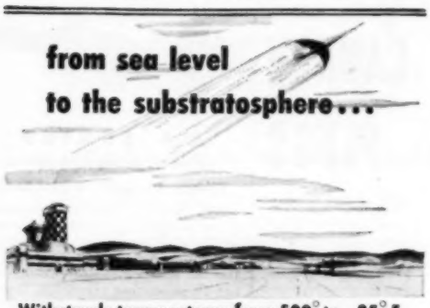
*also First in Interior Fire Protection

Established 1887

W. D. ALLEN Manufacturing Co.

CHICAGO 6 • NEW YORK 7

BREVITY—Identify by IEN - 11706 If you write the maker



Withstands temperatures from 500° to −85° F.

Originally developed to meet the drastic temperature range aircraft encounter, Varglas Silicone Electrical Tubing and Sleeving may be able to lick your tough insulation problems! Here's why: Varglas Silicone is . . .

- **Efficient at 500° F.** — flexible at −85°F.
- **Moisture-Resistant** — to lubricating oil, salt water, acids and mild alkalis.
- **Fire-Resistant** — non-flaming in nature.
- **Abrasion-Resistant** — pliable and non-fraying.
- **Dielectrically Strong** — average readings up to 7,000 volts.

Available in various NEMA colors in several types and grades of tubing, sleeving, lead wire and tying cord.

VARFLEX *Sales Co., Inc.*
306 N. Jay St., Rome, N. Y.

BREVITY—Identify by IEN - 11707 If you write the maker

On any burnishing problem

DEPEND on DU-LITE for a Sparkling Finish

Courtesy Bevin Bros. Mfg. Co.

Here's a case...

After tumbling with an ordinary compound, these kids' bicycle bells came out a dull lifeless gray. Substituting Du-Lite's #3 Burnishing Compound completely removed the gray soapy film, and gave the bells a bright mirror finish at a substantial saving of compound per month.

What's YOUR problem?

Du-Lite's service to industry is complete from research on specific metal finishing problems to installation of processing equipment. Du-Lite's line includes cleaners, strippers, blacking agents, wetting agents, passivating agents, rust preventatives, burnishing compounds etc. for any type of metal.

See your nearest Du-Lite Field Engineer or write for more information.

Du-Lite DU-LITE CHEMICAL CORP.
MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

BREVITY—Identify by IEN - 11708 If you write the maker

Operating expenses dip to a new low when you choose Portable Mixers from the complete Eastern Series. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures. Your small initial investment pays rich dividends in economy.

Eastern's new Bulletin 510 gives complete mixer selection information.

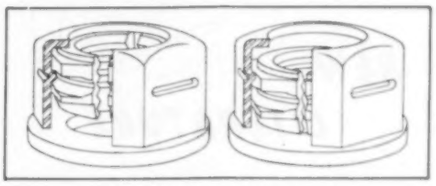
WRITE TO DEPT. RD

Eastern INDUSTRIES, INC.
REGENT ST., EAST NORWALK, CONN.

BREVITY—Identify by IEN - 11709 If you write the maker

FASTENING . . Three part locknut, threaded core, shell and face washer

Source: DELRON CO.
2304-8 E. 38th St., Los Angeles 58, Calif.



Spins on, locks, releases, spins off

Delron #5 trade names a new three-part lockwasher consisting of a hexagon core nut, an enclosing steel shell and a face washer to which the shell is welded. The nut is made in ¼ to $\frac{7}{16}$-in. sizes with American Standard coarse and fine-series threads. The face washer can be specified in any shape or size. The shell can be supplied in acorn and dome design as well as the plain form illustrated.

The core nut has a groove machined around it at about its center to engage inward-facing lugs made by indenting the outside of the shell. These lugs permit the core to ride freely when they register with the groove. The core is split and has a limited amount of axial movement inside the shell.

Application on a stud or bolt is accompanied by free movement until the face washer meets resistance. Then the axial movement of the shell is stopped while the core continues until it bears against the inner face of the washer. In this position it will have caused the lugs to move out of the groove and onto the core faces so the core is pressed inward to grip the bolt as well as to bear down against the face washer.

It holds in this position against the loosening action of vibration until a wrench is applied and the shell has been backed off a turn or two. Then the shell can be tapped to move it axially with reference to the core until the lugs register with the groove and the nut releases its grip.

BREVITY—Identify by IEN - 11710 If you write the maker

CONVEYING . . Concave roller design for work such as artillery shells

Source: ALVEY-FERGUSON CO.
344 Disney St., Cincinnati 9, Ohio

Ten foot lengths

New design of the company's concave-roller conveyor, previously described IEN-8610-42, is now made with steel-tube rollers, 10 gage in wall thickness, formed to provide the concave center that will guide cylindrical work. The rollers are mounted on plain, dust-tight or grease-sealed ball bearings as specified on $\frac{7}{16}$-in. shafts for ordinary work or $\frac{11}{16}$-in. for heavy duty.

Rubber covering can be specified to prevent scratching. The line includes both straight and curved sections with rollers measuring about 5 in. in width by 2½ in. in end diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11711 If you write the maker

Here's a way to cut snow removal costs to the bone — some customers report machine paid for itself in 2 weeks.

The Maxim Snow Thrower is self-propelled, throws the snow 40 feet away in any direction, no built-up banks, handles wet or dry snow. NOW USED IN 32 OF THE 48 STATES. Send for bulletin above, and address of your nearest dealer.

SEND THIS COUPON FOR DETAILED INFORMATION

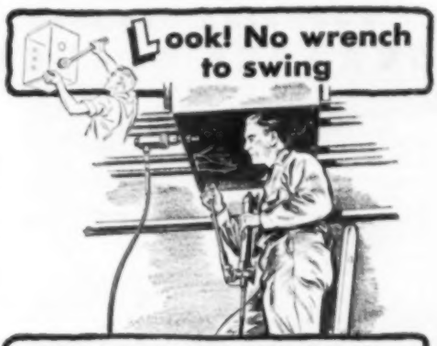
THE MAXIM SILENCER COMPANY
71 Homestead Ave., Hartford 1, Connecticut

Name_____

Address_____

4MTS1

BREVITY—Identify by IEN - 11712 If you write the maker



THIS HYDRAULIC Knock-out Punch is 60% Faster!

Drive knock-out punches with an amazingly low-cost "Porto-Power" hydraulic jack! A *few, easy strokes* on the pump does it! Compare that with the old-fashioned method of a half-hundred knuckle-busting turns on a wrench. With "Porto-Power," conduit openings are *neat* — workmen are happier, safer — dies last 6 times longer!

Write for FREE BULLETIN 50-B on all Blackhawk Electrician's Equipment. Buy from leading supply houses.

BLACKHAWK
Blackhawk Mfg. Co., Dept W-15111, Milwaukee 1, Wis.

BREVITY—Identify by IEN - 11713 If you write the maker

GOOD.....FOR ALL PRESSURES

Yarway Impulse Steam Traps are suitable for any pressure up to specified maximum *without change of valve or seat.* Types available up to 1500 lbs. Simplifies installation and maintenance. Over 650,000 Yarway Traps already *proved on the job.* Sold by over 200 distributors. Bulletin T—1740 free.

YARNALL-WARING CO. 122 MERMAID AVENUE, PHILA. 18, PA.

BREVITY—Identify by IEN - 11714 If you write the maker

Quality Control at JUICE INDUSTRIES' Modern Plant increases soaring demand for their products

Photos above from Clinton Foods, Inc. Plant at Dunedin, Fla.

POWERS Recording TEMPERATURE Regulators

. . . controlling the SKINNER Mallorizer (above) and De-Oiler (at left) play their part in helping to maintain the uniformly fine flavor for which Juice Industries products are famous.

Next time you want more accurate control for any process, heating or air conditioning system, try POWERS. (g61)

THE POWERS REGULATOR CO.
3437 Oakton St., Skokie, Ill.

60 Years of Temperature and Humidity Control • Offices in Over 30 Cities

BREVITY—Identify by IEN - 11715 if you write the maker

Carboloy Tipped SCRAPER BLADES

Speed up scraping operations with these efficient blades. They are especially good for hard alloy iron and the extremely hard bronze castings. If you are already using Anderson Hand Scrapers it is not necessary to buy complete new scrapers in order to use carboloy tipped blades. Simply remove the high-speed steel blade and slip in the Anderson Carboloy Tipped Blade. They are available in three widths.

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

Send for Bulletin 11-35

ANDERSON BROS. MFG. CO., Rockford, Ill.
Hand and Power Hydraulic Presses • Balancing Ways
Roto Checkers • Hand and Power Scrapers • Spotters

BREVITY—Identify by IEN - 11716 if you write the maker

A New Machining Method
SAVES 4.07 HOURS ON EACH 100 PIECES

PORTER-CABLE ABRASIVE-BELT MACHINING

The Piece: Aluminum base plate for electric saw.

The Job: To grind a 45° bevel on one edge.

Previous Method: Plates beveled one at a time on milling machine. Production: 4.54 hrs. per 100 pieces.

Present Method: Work placed on Porter-Cable Wet-Dry Belt Grinder with Automatic Feed Table, Model BG8 — FT9. Simple fixture with one holding clamp holds six pieces. An 80 grit silicon carbide belt is used wet.

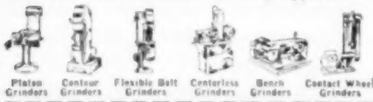
Result: Loading and unloading time cut 83%. Production: .47 hrs. per 100 pieces—a saving of 4.07 hrs. Extra bonus: 89¢ of each dollar spent on milling is saved!

Porter-Cable's BG8 Wet-Dry Belt Grinder often greatly steps up output of work now being milled, shaped, planed or wheel ground. Uses simpler fixtures . . . provides quickef set-ups—holds close dimensional limits. Large surfaces, especially those having a dispersed pattern of bosses, completed by one presentation to belt.

Model BG8-FT9 (with Automatic Feed Table)

Send for free booklet—shows how Abrasive-Belt Machining speeds production. Reduces costs on many operations.

Abrasive-Belt Machines for Every Application



PORTER-CABLE MACHINE COMPANY
6011 N. Salina St., Syracuse 8, N. Y.

Please send me your free booklet: "Abrasive-Belt Machining."

Name .....
Address .....
City ..... State .....

Mfgrs. of SPEEDMATIC and GUILD Electric Tools
In Canada write: Strongridge, Ltd., St. Catharines, Ont.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

AIR CONDITIONING . . "Custom-Air" equipment for multi-room buildings; selection, layout, controls. Bulletin D8-369, 36 pages. Trane Co., 2017 Cameron Ave., La Crosse, Wis. **IEN-01317**

BATTERY CHARGING . . Four-circuit motor-generator unit; description, captioned internal view. Bulletin 11-220, 4 pages. Electric products Co., 1723-27 Clarkstone, Cleveland 12, Ohio **IEN-01318**

BEARINGS . . Roller-bearing journal box for railroad freight cars; sectional view, description. "It's News", 4 pages. Hyatt Bearings Div., 425-29 Middlesex St., Harrison, N. J. **IEN-01319**

BOILERS . . "Powermaster" steam generators, 15 to 500 hp.; sectional view, models, equipment. Bulletin 1218, 12 pages. Orr & Sembower Inc., 860 Morgentown Road, Reading, Pa. **IEN-01320**

BORING . . Accessories and attachments for company's machines; data on tables, heads. "Accessories", 20 pages. Giddings & Lewis Machine Tool Co., 140-44 Doty St., Fond du Lac, Wis. **IEN-01321**

BORING . . Horizontal boring, drilling and milling machine; construction and specification data. "No. 4 Horizontal", 12 pages. Portage Machine Co., 1034 Sweitzer Ave., Akron 11, Ohio **IEN-01322**

BRAKES . . Electric brakes and clutches; selection chart, calculations, dimensions. Catalog 701-A, 44 pages. Warner Electric Brake & Clutch Co., P. O. Box 618-A, Beloit, Wis. **IEN-01323**

CAPACITORS . . Small metallized paper tubular units; features, ratings. Folders NB-142, 143, 144, 4 pages each. Cornell-Dubilier Electric Corp., 1000 Hamilton, South Plainfield, N. J. **IEN-01324**

CASTINGS . . In aluminum alloys; illustrated production facilities, quality control. Bulletin 20-A, 4 pages. Aluminum Industries Inc., 2436-40 Beckman St., Cincinnati 25, Ohio **IEN-01325**

CASTINGS . . In gray, alloy, Meehanite iron and Ni-Resist; picture examples. "Quality Castings", 48 pages. Hamilton Foundry & Machine Co., 51 Rentschler Road, Hamilton, Ohio **IEN-01326**

CASTINGS . . Made by "lost-wax" process; description, list of alloys handled, examples. "Precision Casting", 4 pages. Jelrus Co., 136 W. 52nd St., 8th Floor, New York 19, N. Y. **IEN-01327**

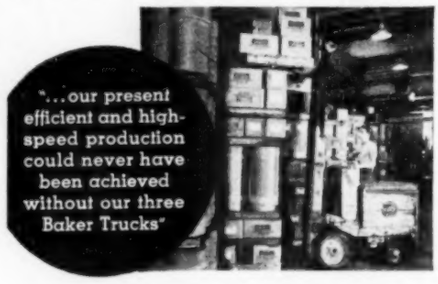
CHUCKS . . Independent, self-centering, combination chucks in wrench-operated design, also power chucks and their operating cylinders; description on development, design features and application; factors in chuck selection, mounting on lathe spindle nose, suggestions on care and operation; notes on magnetic chucks, collets, machine vises. "Chucks and Their Uses", 6th Edition, 68 pages. Skinner Chuck Co., 342-46 Church St., New Britain, Conn. **IEN-01328**

CLEANING . . Material to remove oil and rust before painting metal; condensed description. Pocket Folder 7093-R, 6 pages. Oakite Products Inc., 116A Thames St., New York 6, N. Y. **IEN-01329**

COMPRESSORS . . Type-BPPE reciprocating units, 60 to 1,000 hp.; sectional views in color, construction. Bulletin 222, 8 pages. Bury Compressor Co., 1720-24 Cascade St., Erie, Pa. **IEN-01330**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11718 if you write the maker



Here is what M. E. Horton, production manager, says about his

BAKER TRUCKS at The Dobeckmun Co.

"Of all the multiple problems that face a plant manager in his hectic career, I'd say that one of the least troublesome for me has been material handling. When you consider that in recent years our volume has increased about 400%, it's hard to believe that we haven't made a single addition to our handling labor staff . . . We feel that our present efficient and high-speed production could never have been achieved without our three Baker Trucks. In fact, we're placing an order now for a fourth . . ."

For the complete story of Baker Trucks at The Dobeckmun Company, write for Case Study Report No. 351

BAKER INDUSTRIAL TRUCK DIVISION of The Baker-Raulang Company
1226 West 80th Street, Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 11719 if you write the maker

CANNON PLUGS

. . . standard components on fine electrical and electronic equipment. After 33 years of building electrical specialties, Cannon Electric continues to pioneer new and better types of connectors, maintaining its reputation for progress and development. In the 13 *major type series* of connectors will be found most of the requirements for quick disconnection of electrical circuits. For a survey of the general line, write *for Condensed Catalog.*

UA SERIES
(Ultimate Audio Connectors)
THREE 15-AMP. CONTACTS

Latest development in the connector phase of audio engineering is the new series of microphone and sound circuit connectors designed and built by Cannon Electric to RMA Committee requirements and standards. Briefly, following features should be noted: (1) *Safety latchlock* (2) *Shockproof* (3) *FULL-Floating Socket Contacts* (4) *Splashproof* (5) *Steel plug shells* (6) *Rubber sleeve for cable relief* (7) *Grounding Contact* (8) *Gold plated 15-amp. contacts for low loss.*

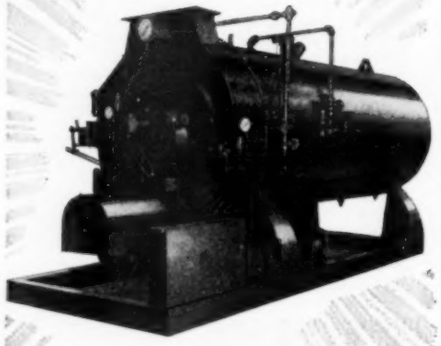
Address Cannon Electric Company, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, Calif. Factories in Los Angeles, New Haven and Toronto. Export: Frazar and Hansen, San Francisco. Representatives in principal cities.

SINCE 1915

CANNON ELECTRIC

BREVITY—Identify by IEN - 11720 if you write the maker

YEARS AHEAD in Steam Generation



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The slogan "Years Ahead in Steam Generation" is *Not* just an advertising phrase but is a statement of fact.

The truly amazing method of Cyclonic combustion has been proven successful by U. S. Industry and again by the Armed Services.

Full power operation from a cold start in 15 to 20 minutes. Savings up to 50% on maintenance. Great fuel operational savings.

Details of these and many other facts regarding Cyclotherm generators are available by writing Dept. J.

Boilers are designed for oil or gas operations from 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

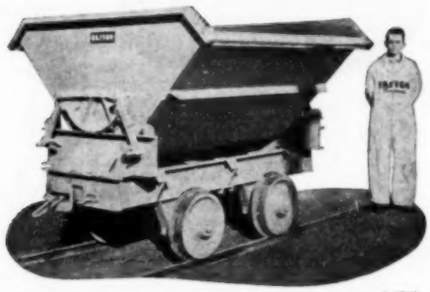
see our CATALOG in SWEET'S FILE ARCHITECTURAL

CYCLOTHERM
STEAM GENERATORS
OSWEGO, NEW YORK

BREVITY—Identify by IEN - 11722 If you write the maker

EASTON

a dependable design and construction service in industrial cars



A-1016

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 11723 If you write the maker

For STURDIEST CONSTRUCTION
... SAFEST PERFORMANCE
... LONG LIFE SERVICE

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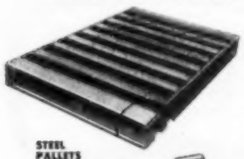
MATERIALS HANDLING EQUIPMENT

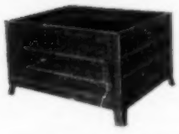
When you specify Phillips Materials Handling Equipment . . . you choose the best . . . because equipment by Phillips is built for a long life of dependable, safe and economical service. A few of these sturdy products are illustrated . . . many others are available to meet any materials handling problem. Write today for bulletins on Phillips materials handling equipment for your requirements.



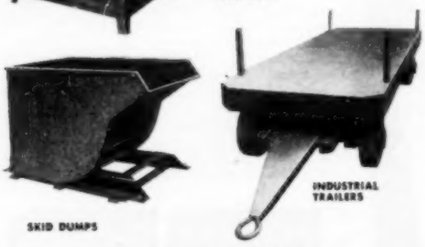
STEEL PALLETS

PHIL-DUMP, JR. USED WITH FORK LIFT TRUCK

MODEL DP-38 SUPER "PHIL-DUMP" TRAILER



MODEL S-20 COLLAPSIBLE "PHIL-BOX"



SKID DUMPS

INDUSTRIAL TRAILERS

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

NEW LITERATURE—Continued

"Condensed reviews for busy readers"

CONNECTORS . . "Elitherend" electric connectors. No. 14 to 500 MCM.; design, sizes, list prices. Catalog 49-B, 8 pages. Albert & J. M. Anderson Mfg. Co., 301 "A" St., Boston 10, Mass. **IEN-01331**

CONNECTORS . . "QuelArc" circuit-breaking plugs and receptacles; design features, types, ratings. Bulletin 602, 4 pages. Pyle-National Co., 1348 N. Kostner Ave., Chicago 51, Ill. **IEN-01332**

CONSTRUCTION . . Concrete forms; basic principle, illustrated details and applications. Catalog F-7, 36 pages. Symons Clamp & Mfg. Co., 4257 W. Diversey Ave., Chicago 39, Ill. **IEN-01333**

CONSTRUCTION . . Concrete-form clamps, ties, tie rods; descriptions, list prices. Folder 1150, 4 pages. Williams Form Engineering Corp., 1503 Madison Ave., Grand Rapids 7, Mich. **IEN-01334**

CONTRACT WORK . . In metal fabricating, finishing, assembling; plant and products. "Facilities . .", 12 pages. Geuder, Paeschke & Frey Co., 322-36 N. 15th St., Milwaukee 1, Wis. **IEN-01335**

CONTRACT WORK . . In metal parts, electrical wiring; facilities, examples. "Ready for Service", letterhead request, 12 pages. Neon Products Inc., 1009-13 Neon Ave., Lima, Ohio **IEN-1336**

CONTRACT WORK . . In electronic equipment; notes on facilities and examples of work. "Facilities", 12 pages. Polarad Electronics Corp., 98-101 Metropolitan Ave., Brooklyn 11, N. Y. **IEN-01337**

CONTRACT WORK . . For large plain bearings, castings, machine parts, at Texas plant; products list. Facilities, 4 pages. United American Metals Corp., 202 Diamond St., Brooklyn 22, N. Y. **IEN-01338**

CONTROLS . . Contact-making electric meter and relay; ranges, list prices, suggested applications. Bulletin G-1, 4 pages. Assembly Products Inc., Bell & Main Sts., Chagrin Falls, Ohio **IEN-01339**

CONTROLS . . "Ratomatic" flow-ratio controls; schematic diagrams of operating principle, components. Catalog 52, 8 pages. Fischer & Porter Co., 4600 County Line Road, Hatboro, Pa. **IEN-01340**

CONTROLS . . Feeders, valves, switches for boiler and liquid-level service; condensed data. Supplemental Catalog, 20 pages. McDonnell & Miller Inc., 3502 N. Spaulding, Chicago 18, Ill. **IEN-01341**

CONVEYING . . Pivoted-bucket unit for free-flowing wet or dry materials; bucket details, typical uses. Bulletin HB-551, 4 pages. Hapman Conveyors, 628-32 Gibson St., Kalamazoo, Mich. **IEN-01342**

CRANES . . Picture book on applications of revolver cranes to 15 ton at 150-ft. radius. Catalog 400-R-3, 20 pages. American Hoist & Derrick Co., 61 S. Robert St., St. Paul 1, Minn. **IEN-01343**

DISPENSING . . Hand machine for strips of wide pressure-sensitive tape; operating description. Leaflet, "Big Inch No. 40", 2 pages. Better Packages Inc., 251 Canal St., Shelton, Conn. **IEN-01344**

DOORS . . For refrigerators and cold chambers; types, sizes, suggested specifications, drawings. Catalog, 12 pages. Jamison Cold Storage Door Co., 428 Forest Drive, Hagerstown, Md. **IEN-01345**

DRILLING . . Stock line of interchangeable spade drills, core drills and holders, 1 1/64 to 5 in.; notes on design for drilling deep holes or holes in hard and tough metals, size tables on 256 cutters in 1/64-in. steps with two attachment methods and high-speed-steel and carbide-tipped designs; grinding instructions, feeds and speeds, list prices. Catalog 51, 52 pages. Conner Tool & Cutter Co., 1010 E. McNichols Rd., Detroit 3, Mich. **IEN-01346**

DRILLING . . Twist drills, step drills, countersinks, masonry drills; sizes, list prices, sets. Bulletin 51-816, 12 pages. DeAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. **IEN-01347**

DRIVES . . Speed reducers and gearmotors; selection data and tables, hp. ratings. Pocket Catalog 51, 96 pages. Abart Gear & Machine Co., 4830-34 W. 16th St., Chicago 50, Ill. **IEN-01348**

DRIVES . . "Roto-Cone" variable-pitch motor pulley; operation, drive combination tables, dimensions. Catalog 651, 32 pages. Gerbing Mfg. Corp., 11803 Milwaukee Ave., Northbrook, Ill. **IEN-01349**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11725 If you write the maker

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PRODUCTION CONTROL, 1951

—by men who have controlled production

This new booklet by Remington Rand offers you, *free*, first-hand experience in case-history form, by production men who are dealing successfully with today's complex manufacturing problems.

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For handling a lot of different loads in general purpose use, Northern Heavy Duty Hi-Lift Hoists will give you wider service per dollar of investment.

for safer, faster material handling at all times

Northern Cranes are designed and built to give you safer, faster overhead material handling at all times.

NORTHERN ENGINEERING WORKS
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NORTHERN CRANES

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GET THIS BOOK!
BOOKLET No. 2008 Packed with valuable data.

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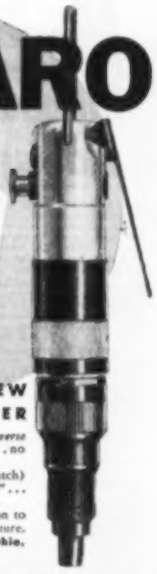
CLEVELAND TRAMRAIL

BREVITY—Identify by IEN - 11728 If you write the maker

New!

NOBODY BUT ARO OFFERS YOU

Instant PUSH-BUTTON Reverse



A REVOLUTIONARY SCREW DRIVER AND NUT SETTER

ARO's new push-button valve means *instant reverse action* . . . no need to remove from work . . . no stopping to turn levers . . . no wasted time.

Adjustable clutch (available with positive clutch) Length 7-11/16" . . . outside diameter 1-5/16" . . . weight 1.4 lb.

This outstanding tool must be seen in action to appreciate its amazing action. Write for literature.

The Aro Equipment Corporation, Bryan, Ohio.
Aro Equipment of Canada, Ltd., Toronto

ARO AIR TOOLS Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

BREVITY—Identify by IEN - 11729 If you write the maker

78% reduction in hand injuries plus 6c per man-hour saved

CASE NO. 207

Problem: High percentage of hand injuries from cuts, acid and heat burns and infections, in plant employing over 1000 men to shear, form and dip-coat sheet steel products. Canvas and neoprene gloves quickly cut or tore, replacement costing over 10c per man-hour on many operations.

Solution: Change-over to heavy NEOX (reinforced neoprene) coated gloves for work with hot metal and acid solutions, and gloves with natural rubber coated palms and thumbs for handling sharp-edged dry sheets. Reduced hand injuries 78%. Gloves also wore 3 to 5 times longer, averaging saving of 6c per man hour.

Plastic, Natural Rubber and NEOX (Reinforced Neoprene)

Safe hands cut costs 5 ways

1: Fewer lost time accidents
2: Faster, surer work handling
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4: Improved job attitude
5: 40% to 70% savings in usual glove costs to company or employees.

Send description of your problem. We will supply free test samples.

Edment Manufacturing Company
1226 Walnut St., Coshocton, Ohio
World's largest maker of coated industrial gloves

Edmont COATED FABRIC GLOVES

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Here's Efficient, Dependable Air Supply

JOY WL-80 "UNITAIR" COMPRESSOR

★ A size for *every* standard motor rating
★ Force-feed lubrication
★ Small floor-space requirements
★ 81 to 640 CFM
★ Two Stage ... Air cooled

And here's FREE HELP!

Bulletin A-56 . . . new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer

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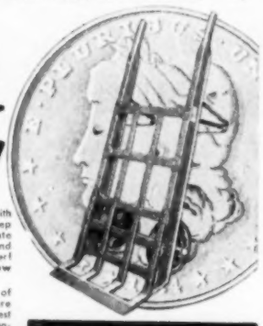
GALT, ONTARIO

BREVITY—Identify by IEN - 11731 If you write the maker

More for your money!



New STEELITE® WHEELS — with sealed-in ball bearings that keep grease in, dirt out and eliminate axle wear—make American Hand Trucks a better buy than ever! **And most popular models now sell for less than before!**

The side rails and cross bars of these familiar red trucks are channel-section steel for hardest service. Pressed-steel bolted construction keeps maintenance costs down. Light weight and fingertip balance make them the easiest-handling trucks you can buy!

Choose American Hand Trucks from 50 types and sizes for most efficient material handling at lowest cost . . . stocked by distributors everywhere.

AMERICAN PRESSED-STEEL HAND TRUCKS

The American Pulley Company
4242 WISSAHICKON AVE., PHILA. 29, PA.

Please mail free American Hand Truck Bulletin to
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ( ) STATE _____

NEW LITERATURE—Continued

"Addresses given in each review"

DRIVES . . Flexible shafts for power drive and remote control; selection data, types, ratings, fittings, uses. Bulletin 515, 12 pages. Stow Mfg. Co., 25 Shear St., Binghamton, N. Y. **IEN-01350**

DRYING . . Ovens based on company's radiant-type gas burner; burner data, assembly examples. "Industrial Ovens", 4 pages. Burdett Mfg. Co., 3431-35 W. Madison St., Chicago 24, Ill. **IEN-01351**

ELECTRONIC PRODUCTS . . Tubes, parts, hardware, tools, testers, sound units; data, list prices. Catalog 127, 212 pages. Allied Radio Corp., 831-35 W. Jackson Blvd., Chicago 7, Ill. **IEN-01352**

ELECTRONIC PRODUCTS . . Industrial electronic tubes by a number of makers; ratings, list prices. "Tube Catalog", 28 pages. Milo Radio & Electronics, 202 Greenwich St., New York 7, N. Y. **IEN-01353**

ELECTRONIC PRODUCTS . . Metallic-oxide cores; characteristic curves on three types, uses. Bulletin, "Ceramag Cores", 12 pages. Stackpole Carbon Co., 1942 Tannery St., St. Marys, Pa. **IEN-01354**

ENGINES . . Type-FV diesel engines, 6 to 16 cylinders; illustrated construction, hp. rating charts. Bulletin FV-63, 24 pages. Cooper-Bessemer Corp., 700 Main St., Mount Vernon, Ohio **IEN-01355**

ENGINES . . "Supairthermal" supercharged diesel or gas engine; cycle diagrams, ratings and test data. Bulletin 191, 12 pages. Nordberg Mfg. Co., 3071-75 S. Chase Ave., Milwaukee 7, Wis. **IEN-01356**

EXTINGUISHING . . "Aer-O-Foam 99" liquid for mechanical foam equipment; properties and use. Bulletin 500-A, 4 pages. National Foam System, Adams & Union, West Chester, Pa. **IEN-01357**

FASTENINGS . . Laminated metal-neoprene washer for sealing and other functions; types, sizes, uses. Bulletin 513, 4 pages. Fabricated Products, Box 127-A, Water St., West Newton, Pa. **IEN-01358**

FASTENINGS . . "Everlock" lockwashers; details on locking, types, size tables, combinations. 1951 Catalog, 32 pages. Thompson-Bremer Co., 1638-42 W. Hubbard, Chicago 22, Ill. **IEN-01359**

FLOORS . . Patching or resurfacing material for concrete floors; characteristics, instructions. Folder, "Stonpach", 4 pages. Stonhard Co., 1304-8 Spring Garden St., Philadelphia 23, Pa. **IEN-01360**

GRINDING . . Type-H hydraulic machine to grind cam-shaped skirt of automotive pistons; specifications. Bulletin CH-51, 4 pages. Landis Tool Co., 26 E. Sixth St., Waynesboro, Pa. **IEN-01361**

GRINDING . . Small bench grinders, also ball-bearing arbors; models, dimensions, specifications, uses. Catalog, 8 pages. Poly Products, 2030-34 E. Walnut St., Pasadena 8, Calif. **IEN-01362**

HANDLES . . For plug and thread gages; list prices on AGS designs in cold-rolled steel. "Ateco Gage Handles", 2 pages. Aurelio Tanzi Engineering Co., 428-32 Jefferson, Brooklyn 6, N. Y. **IEN-01363**

HEAT TREATING . . "Atmo-Gen" ammonia-type atmosphere generators; specifications. Bulletin IND-1147-CR, 2 pages. Hevi-Duty Electric Co., 4210-14 W. Highland, Milwaukee 1, Wis. **IEN-01364**

HEAT TREATING . . Furnaces for large-caliber ammunition; condensed data, typical schedules. Folder SC-154, 4 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio **IEN-01365**

HEATING . . Floor and wall-mounting convectors for building use; capacity tables, dimensions. Catalog 702-A, 16 pages. Airtherm Mfg. Co., 752 S. Spring Ave., St. Louis 10, Mo. **IEN-01366**

HEATING . . Water heaters for washroom and process use, mixing valves; capacity tables. Catalog 60, 12 pages. General Fittings Co., 118 Georgia Ave., Dept. 19, Providence 5, R. I. **IEN-01367**

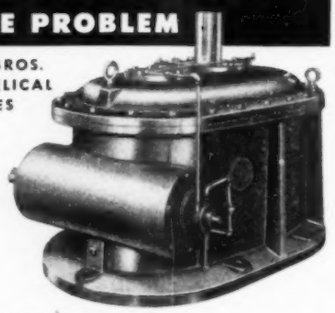
HEATING . . Model 15-BL electronic generator for heating, heat treating; construction points. Form LJ-1295R, 8 pages. Radio Corp. of America, 1941 Front & Cooper Sts., Camden 2, N. J. **IEN-01368**

HEATING . . Oil-burning water heater for locomotive engine radiators or passenger-car use; condensed data. Bulletin 535, 4 pages. Vapor Heating Corp., 4503 W. 16th St., Chicago 23, Ill. **IEN-01369**

BREVITY—Identify by IEN - 11732 If you write the maker

AN ANSWER TO YOUR DRIVE PROBLEM

FOOTE BROS. WORM HELICAL DRIVES



Rugged strength, the ability to stand up under punishing loads characterize this drive.

Input shafts are horizontal, output shafts vertical, up or down — making these units ideal for use wherever materials must be agitated or mixed.

Available in ratios from approximately 25 up to 285 to 1 — capacities up to 128 h. p.

Write for Bulletin WHA.

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

BREVITY—Identify by IEN - 11733 If you write the maker

• And she's right! Workers in your plant can move materials easier, faster, *and at less cost* with Diamond Fibre Receptacles. That's because these containers are made from an unusual plastic weighing only ½ as much as aluminum! Yet C-D Diamond Fibre is as tough as elephant hide—will not crack, splinter, or peel. Moreover, boxes, barrels, cans, and other containers made of Diamond Fibre have smooth, hard surfaces that will not mar even the most delicate fabrics. Write for descriptive Receptacle Catalog, now.

C-D DIAMOND FIBRE RECEPTACLES
CONTINENTAL-DIAMOND FIBRE CO., NEWARK 21, DEL.

BREVITY—Identify by IEN - 11734 If you write the maker

MAKE THIS FREE TEST

and discover for yourself there's no better direct positive print paper

DIETZGEN DIRECTO
T. M. REG. U. S. PAT. OFF.

NOW you can have longer-lasting direct prints that fairly sparkle with contrast

You get blacker-than-ever lines on whiter-than-ever backgrounds with DIRECTO, the new, improved Dietzgen semi-dry process that gives you ready-to-use direct positive prints in seconds. DIRECTO prints fight wear and tear, and even when oil-soaked, grime-smeared, sweat-stained they retain amazing legibility.

You are assured of uniformity because DIRECTO developing solution is chemically stable, always brings out strong black images, whether mixed fresh or old. And there's no washing, no lengthy drying, no negative needed. DIRECTO prints are made direct from your translucent original.

Compare this remarkable material with any other you have ever used. DIRECTO is available now with blue, pink, yellow and green backgrounds, as well as white, for convenient color coding. Send for samples.

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EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

BREVITY—Identify by IEN - 11736 If you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine®
First in roll production equipment

BREVITY—Identify by IEN - 11737 If you write the maker

INCLUDE *Wheeler* REFLECTORS IN YOUR DEFENSE PRODUCTION PLANS

Whatever you manufacture, you can depend on the greater lighting efficiency of Wheeler Fluorescent Fixtures to help speed production. There's a Wheeler Fixture for every job and every plant condition—engineered for installation ease and maintenance savings. Write

Wheeler Reflector Co.
275 Congress St. Boston 10, Mass.

Wheeler REFLECTORS

Distributed Exclusively Through Electrical Wholesalers

MADE BY SPECIALISTS IN LIGHTING EQUIPMENT SINCE 1881

BREVITY—Identify by IEN - 11738 If you write the maker

Clebar

the stop watch of *split second accuracy*

Decimal Timer for Time Study, minute divided into hundredths, side slide starts and stops hands, fly-back from crown, 7 jewels, non-magnetic, 30 minute register. SNAP-BACK ACTION.

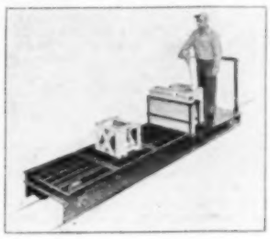
There is a Clebar stop watch for every precision timing purpose. Write for new FREE catalog which illustrates more than a score of models.

CLEBAR WATCH AGENCY
521 FIFTH AVENUE, NEW YORK 17

BREVITY—Identify by IEN - 11739 If you write the maker

CAR . . Electric transfer unit equipped with sectional roller top bed

Source: LOGAN CO.
1113-17 Franklin St., Louisville 6, Ky.



Known as Transfer Car

New car rides on a track between conveyor runs in production and storage departments to carry work from one location to another on its roller-top bed. The car wheels are mounted on flange-type anti-friction bearings in a structural frame. Drive is by an electric motor powered by a storage battery in assembly with a control lever. These power unit parts are the elements of a standard electric truck. The operator rides a platform at one end as shown in the illustration.

BREVITY—Identify by IEN - 11740 If you write the maker

WATER TREATING . . Wetting compound adds to water to soften glue on paper

Source: KANO LABORATORIES
1071 S. Thompson Lane, Nashville 11, Tenn.

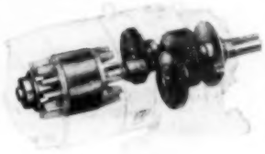
Single gallon lists at $2.90

Tak is a new liquid in concentrated form for addition to water employed in label moisteners, envelope-sealing machines, postage meters where glue must be moistened for application. The liquid breaks down surface tension in the water, enables it to penetrate into and soften the glue quickly. The chemical formula employed also prevents formation of bacteria and odors and retards tendency of the water to corrode metal parts. One gallon makes 10 gal. of solution. Packaging is in 1 to 15-gal. containers.

BREVITY—Identify by IEN - 11741 If you write the maker

MOTOR . . Geared head design, 5 to 25 hp., speeds from 30 to 84 rpm.

Source: U. S. ELECTRICAL MOTORS INC.
202 E. Slauson Ave., Los Angeles 54, Calif.

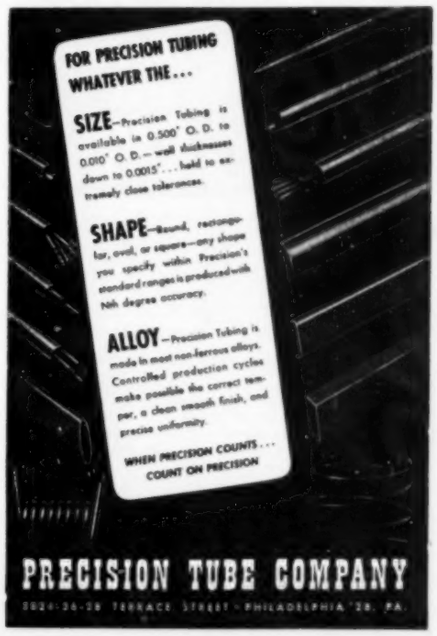


Side thrust is balanced

Type GL Syncrogear is a new geared-head motor in which duplicate gearing is employed on the two sides of the motor-mounted pinion to drive the output gear, also centrally located. The design doubles the effective torque rating of a conventional single pinion-and-gear assembly. It is particularly suited to provide high torque at low speed while occupying a minimum space. The motor is available in a range of electrical characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 11742 If you write the maker



PRECISION TUBE COMPANY
5024-36-38 TERRACE STREET · PHILADELPHIA 28, PA.

BREVITY—Identify by IEN - 11743 If you write the maker

ALL-PURPOSE SLINGS

with new Roebling Tapered Sleeve Splice . . . stronger . . . cost less!

NEW ROEBLING All-Purpose Slings with the Tapered Sleeve Splice are delivered ready for the job. The unique rolled loops and tapered sleeve attachments develop the full strength of the rope ...cost less than ordinary tucked splices...save "splicing your own".

Made of Roebling "Blue Center" Steel Wire Rope, All-Purpose Slings are unsurpassed for toughness and dependability...flexible and easy to handle...come in all standard lengths and sizes. Send for full information and for the free "Sling Data Book." John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 11744 If you write the maker

FORD uses Kodak Contour Projectors to standardize inspection

This inspector at Ford is checking starting motor laminations with the Kodak Contour Projector, Model II. With dimensional variations in the order of .0001" seen greatly magnified, wear of dies is easy to locate.

When a precision part is produced by the hundreds of thousands, often in widely separated plants, inspection becomes a problem—not only in holding tolerances involved, but in making sure that every inspector is measuring the same dimensions in the same way. At the Ford Motor Co., the Kodak Contour Projector, Model II, affords an ideal solution.

With the Kodak Contour Projector, the operator simply compares an enlarged image with a tolerance chart laid on the bright 14" screen. One chart and an appropriate fixture for holding work are all that's needed for *complete* inspection. A number of different operators, using several instruments, will inspect parts to identical specifications.

What's more, fixtures and charts are easily changed to inspect all sorts of precision parts, whether large or small, at magnifications up to 100×. Accessories are available for examination of surface details or deep recesses, and for projection by a vertical light beam.

Fast, accurate, and requiring little skill to operate, the Kodak Contour Projector may well be the answer to your inspection or measurement problem. It will pay you to investigate. For complete information, write to Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

If you need to test precision spur and helical gears in action, write for information about Kodak Conju-Gage instrumentation.

Kodak

BREVITY—Identify by IEN - 11746 if you write the maker

MOTO-TRUC'S MODEL PAL

- REDUCES COSTS
- SAVES MAN HOURS
- SPEEDS PRODUCTION

Moto-Truc's 6 Basic Models cover any problem in the "Walkie" field, whether Pallet, Platform or Hi-lift.

Write for Bulletin No. 51 Today

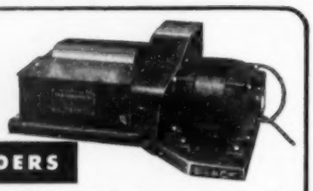
A "twist of the wrist" does it.

In one of the nation's largest warehouses, Moto-Truc's Model PALS now do the work of many hands, adding 1/3 more storage space and speeding up "In and out" traffic.

THE MOTO-TRUC CO.
1953 E. 59th ST., CLEVELAND 3, OHIO
PALLET PLATFORM AND HI-LIFT TRUCKS

BREVITY—Identify by IEN - 11747 if you write the maker

PORTABLE...MOTOR DRIVEN

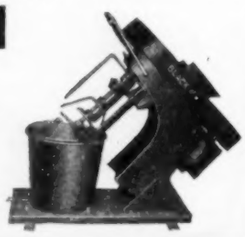


SPREADERS

Made for all kinds of adhesives . . . hot or cold. Applies an even, economical coat. 115 volt AC motor. Floor stand with casters available if desired. Write for Bulletin 11-A.

MIXERS

Made in 2, 5, 7½, and 15 gal. sizes. Powder added gradually through oscillating sifter. Arm hinged so that it can be tilted out of the way. Two way agitation. Write today for Bulletin 11-I.



THE BLACK BROTHERS CO., INC.
MENDOTA, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 11748 if you write the maker

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	650	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

$2 each

gives up to 2000 readings

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

NEW LITERATURE—Continued

"Size given to assist your selection"

HEATING . . "Chromalox" package-type electric liquid heater with thermostat: models, uses. Folder F-1529. 4 pages. Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa. **IEN-01370**

ICE MAKING . . Freezing cans, filling, agitating, handling equipment, crushers: data summaries. Catalog 63. 40 pages. Jos. A. Martocello & Co., 227-231 N. 13th St., Philadelphia 7, Pa. **IEN-01371**

INSULATING . . Thermal insulation, 85 per cent magnesia and others: properties, sizes, application. Bulletin 4-H, 8 pages. Ehret Magnesia Mfg. Co., Ehret St., Valley Forge, Pa. **IEN-01372**

INSULATING . . "Dieflex" electrical tube and sleeving: types, grades, specifications. Bulletin 250-A, 8 pages. Insulation Mfrs. Corp., 563-67 W. Washington Blvd., Chicago 6, Ill. **IEN-01373**

INSULATING . . Thermal insulation of 85 per cent magnesia: size tables, heat transfer data. "Custom Molded", 12 pages. Mundet Cork Corp., 7107 Tonnelle Ave., North Bergen, N. J. **IEN-01374**

ISOLATING . . "Micro Metallic" porous-metal snubber to prevent pressure-gage shock: models, ratings, uses. "Snubber", 2 pages. Chemiquip Corp., 8 E. 79th St., New York 29, N. Y. **IEN-01375**

LATHE TOOLS . . Tool bits in high-speed steel: sizes and list prices on three types, notes on grinding. Folder 51-805, 4 pages. DoAll Co., 252-56 N. Laurel Ave., Des Plaines, Ill. **IEN-01376**

LUBRICATING . . "Ucon" synthetic lubricants: properties, use in glass and ceramics plants. Bulletin F-7404, 8 pages. Carbide & Carbon Chemicals, 30 E. 42nd St., Rm. 1213, New York 17, N. Y. **IEN-01377**

LUBRICATING . . Welded-steel oilers and supply cans: illustrated types, dimensions, construction. Catalog 100, 10 pages. Gem Mfg. Co., 1235-7 Goebel St., Pittsburgh 33, Pa. **IEN-01378**

LUBRICATING . . Picture review of the company's equipment, manufacturing facilities, products. Bulletin 1-2758, 8 pages. Lincoln Engineering Co., 5732 Natural Bridge, St. Louis 20, Mo. **IEN-01379**

METAL TREATING . . Condensed data on rust-proofing, paint-bonding, cleaning materials. "Reference List 438-C," 8 pages. American Chemical Paint Co., P. O. Box 301-A, Ambler, Pa. **IEN-01380**

MILLING . . Angle attachment for company's No. 4 machine, also rotary table; condensed catalog data. Leaflets, 2 pages each. Portage Machine Co., 1034 Switzer Ave., Akron 11, Ohio **IEN-01381**

MILLING . . Solid carbide and carbide-tipped milling cutters, reamers, drills: sizes, net prices. "Net Price Schedule", 24 pages. Super Tool Co., 21632 Hoover Road, Detroit 13, Mich. **IEN-01382**

MIXING . . "Entoleter" mixer for liquids and powders: specifications, examples of use. Folder 4502, 4 pages. Safety Car Heating & Lighting Co., Box 904-A, New Haven 4, Conn. **IEN-01383**

MOTOR CONTROL . . Starters, contactors, relays, control panels: catalog data. "Controlog", letterhead request, 88 pages. Clark Controller Co., 1144-48 E. 152nd, Cleveland 10, Ohio **IEN-01384**

MOTORS . . Large vertical induction motors, 60 hp. and up: range chart, construction features. Bulletin 05-B-7629. 4 pages. Allis-Chalmers Mfg. Co., 900 S. 70th St., Milwaukee 14, Wis. **IEN-01385**

OIL TREATING . . "Powersol" fuel-oil additive and diesel-fuel additive: application description. "Liquid Power", 4 pages. Power Plant Products Co., 91-95 Federal St., Boston 10, Mass. **IEN-01386**

PACKAGING . . Textile, paper and plastic bags for product use: picture review, notes on facilities. "Worth Looking Into", 16 pages. Chase Bag Co., 307-11 W. Jackson Blvd., Chicago 6, Ill. **IEN-01387**

PACKAGING . . Summary of military packaging specifications, barrier materials. Bulletin 40-MG, letterhead request, 36 pages. Mehl Mfg. Co., 2037 Reading Road, Cincinnati 2, Ohio **IEN-01388**

PIPE FITTINGS . . Ball-bearing swivel joints: details. Two bulletins, "Packing Units", and "Dimension Data", 4 pages each. Chiksan Co., 328-33 Pomona Ave., Brea, Calif. **IEN-01389**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11749 if you write the maker

Don't ruin a valuable piece of equipment merely because some part is rusted tight. Apply Kroil, the amazing new chemical lubricant that creeps into millionth inch spaces (proved by laboratory tests), dissolves rust, supplies necessary lubrication and

LOOSENS FROZEN PARTS

9000 of America's leading plants can't be wrong! They used KROIL during the last war and are still depending on it to save expensive labor and valuable parts. They say: "Kroil loosened bushings after a 12-ton press had failed" . . . "on repairing heat treat trolleys formerly destroyed every nut. Now KROIL saves them all, and time, too" . . .

You too should be using KROIL every day. Try it on money-back basis. Gallon $3.50; with Kroiler trigger squirt gun (shoots a drop or a stream 15 feet, if desired) $4.75, f.o.b. our factory.

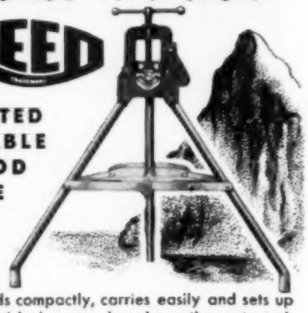
KANO LABORATORIES
1071 S. Thompson Lane, Nashville 11, Tenn.

KANO LABORATORIES

BREVITY—Identify by IEN - 11750 if you write the maker

Solid as a Rock!

the REED



PATENTED PORTABLE TRIPOD VISE

One unit. Folds compactly, carries easily and sets up instantly. A quick downward push on the patented, large-surface tray locks the stand solidly so that all cutting or threading effort goes into the work. Legs cannot buckle under any working conditions. They line up vertically with the face of the well-known REED long-jaw vise. *Ask your jobber or write . . .*

REED TRADEMARK
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

BREVITY—Identify by IEN - 11751 if you write the maker

ORDERS from Uncle Sam?

SEE NOX-RUST FOR YOUR RUST PREVENTIVES

To fight the battle against rust, Uncle Sam has drafted rigid requirements for rust preventives that are used in packaging metal parts and products. To find the proper product conforming with these Federal Specifications, call on NOX-RUST . . . the America's leading manufacturer of rust preventive products, NOX-RUST has the answer for you . . . all prepared in a handy chart that shows Federal Specifications, uses, applications and specific product recommendations. For your free copy of this chart, phone or write today.

STOP RUST WITHOUT OIL OR GREASE

Here's a NEW way to package parts and machines without oil or grease costings. NOX-RUST's new Vapor-Wrapper delivers your parts "factory fresh"—sparkling clean—ready for immediate assembly or use. Send for the "HOW" book that shows case histories.

NOX-RUST
CHEMICAL CORPORATION
Rust Preventive Division
2487 S. Halsted St. • Chicago 8, Ill.
BALTIMORE • PHILADELPHIA
DETROIT • SAN FRANCISCO

BREVITY—Identify by IEN - 11752 if you write the maker

CHECK CORROSION!

with TYGON PAINT

You can cut corrosion costs quickly and surely with TYGON PAINT—the liquid plastic. Easy to apply and fast drying, TYGON PAINT needs no more than normally good surface preparation. The dried film is tough, flexible and non-flammable. It's smooth, easy to clean and non-oxidizing. It resists virtually all acids, alkalies, oils, greases and waters.

Use it on tanks, pumps, motors, piping, miscellaneous equipment, structural steel, walls and ceilings.

261C

Write for Bulletin 720

PLASTICS and SYNTHETIC DIVISION

U. S. STONEWARE
AKRON 9, OHIO

BREVITY—Identify by IEN - 11753 If you write the maker

BURNDY • BURNDY • BURNDY • BURNDY

VERSITAP
CONNECTOR

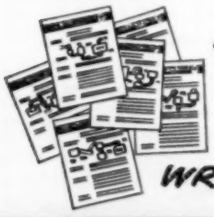
Can be used as a tee, tap, cross or end-to-end connector. Each size takes a convenient range of cable combinations. Compact, no bolts protruding, all edges rounded, easy to tape. Stocked by your Burndy Distributor.

BURNDY
BURNDY ENGINEERING CO., INC.
NEW YORK 54, NEW YORK

BREVITY—Identify by IEN - 11754 If you write the maker

Give Your Control Problems the AIR

Here's an example of how one smart Plant Engineer used W A B Pneumatic devices to inexpensively lick a continuous control problem. Our Enginairing Data File shows many others. Your ingenuity will suggest ways you can adapt the ideas to solve some of YOUR problems. Write for a complete file for permanent reference. No charge.



FREE
This Enginairing data file
WRITE

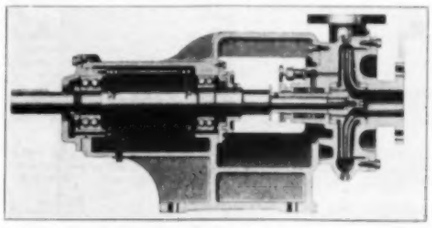
INDUSTRIAL PRODUCTS DIVISION WESTINGHOUSE AIR BRAKE COMPANY WILMERDING PENNA

Factory Branch: Emeryville, Calif.
Distributors throughout the United States . . . Consult your Classified Directory.
Distributed in Canada by: Canadian Westinghouse Co., Ltd. Hamilton, Ontario

BREVITY—Identify by IEN - 11756 If you write the maker

PUMP . . Single stage centrifugal, for chemicals, hot liquids, petroleum

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Fingers keep rings in place

Capacities to 1,200 gpm., heads to 250 ft., temperature to 500 deg. F. characterize a new line of single-stage centrifugal pumps in which the self-contained pump assembly is pedestal mounted to ride on ring-oiled ball bearings. The pump is available in metals suitable for any given service and ranges from 1¼ by 1¼-in. to 8 by 6-in. suction and inlet connections. Two pedestal sizes cover the range of pump sizes. The complete assembly is available for direct coupling to a motor or for V-belt drive.

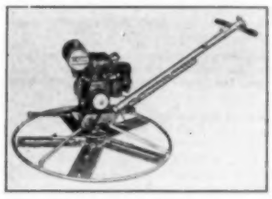
Lubricating oil held in a large reservoir is picked up by two rings and fed to the double-row ball bearings. Reservoir design includes seals at the two ends with a gasketed head at the pump end and an O-ring at the outboard end. The shaft is made of carbon steel or stainless steel and normally is equipped with a bronze sleeve extending through the pump seal, or stuffing box, to mount the closed-design impeller. There are six alternate designs of stuffing box and seal assemblies in addition to the fluid-lubricated design shown in the illustration.

Bulletin 52B7638, 6 pages, presents a sectional view with descriptive paragraph, shows sections through the alternate sealing arrangements and includes a dimension table covering all of the pumps in the line.

BREVITY—Identify by IEN - 11757 If you write the maker

CONSTRUCTION . . Concrete float and finishing machine has five trowels

Source: WHITEMAN MFG. CO.
3251 Casitas Ave., Los Angeles 39, Calif.



Operator guides it

The five trowels in this new Model-C engine-driven combination float and finishing machine are adjusted for floating operation by turning a knob at the operator's handle. In this position the trowels compact the freshly poured concrete, drive out air pockets, bring up moisture and produce a good surface. The trowels are then set for finishing to leave the concrete smooth and level.

A guard ring permits operating within 1½ in. of walls and columns. Drive is by a 6-hp. 4-cycle gasoline engine belt-connected to the trowel assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11758 If you write the maker

Increase production... cut costs... with this

BOSTITCH

T5 Tacker

You increase production and cut costs when you use the Bostitch T5 Tacker. Shoots in staples twice as fast as ordinary tacking. Leaves one hand free for better control of work. Easily fastens as close as ⅛" to internal corners. Permits untrained operators to outstrip the fastest worker with old-style hammer and tacks. Safer — no swallowing of tacks, no mouth infection. For complete details write for Bulletin 133, BOSTITCH, 448 Mechanic Street, Westerly, R. I.

BOSTITCH
fastens it better, AND FASTER with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

Trade-mark "Bostitch" Registered U. S. Patent Office and Foreign Countries

BREVITY—Identify by IEN - 11759 If you write the maker

What Answers Can You Come Up With?

by Utilizing FULLERGRIPT

GRINDER SHROUD devised from Fullergript brush strip by maker of vertical die and surface grinder . . . concentrates coolant and protects operator from spray.

REMOVING GLOSS from molded counter top accomplished by buffing cylinder with widely-spaced but spiralled Fullergript brush strips. Engineering trick was to work out angle of spiral giving an even buff.

NEW ANSWERS to puzzling problems can often be found with the brushing action of Fullergript strips. You are introduced to new vistas of mechanical possibilities. And our engineers will work with you. Simply write and ask for information from . . .

FULLER BRUSH FULLERGRIPT At home... in business, Too

THE FULLER BRUSH COMPANY
INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

BREVITY—Identify by IEN - 11760 If you write the maker

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

Complete information on improved centrifugal Spray Dryer, illustrated with photographs and engineering design drawings.

THE DRYING AND CONCENTRATING COMPANY DRYER

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

Improved method for DEHYDRATING

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

365

DRYING and CONCENTRATING CO.
232 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

BREVITY—Identify by IEN - 11761 If you write the maker

Your Oster Distributor Offers You

FAST, Low Cost Bolt Threading

Speed, accuracy, and moderate price of this machine makes it a real cost-reducer on a wide variety of threading work.

OSTER "RAPIDUCTION JR." BOLT THREADING MACHINE
Standard Bolt Range ¼" to 1½"
Pipe or Nipple Range
No. 781-A: ⅛" to 1¼"
No. 782-A: ½" to 2"

Equipped with Semi-Automatic Revolving Die-Heads

Two models (No. 781-A and 782-A) are identical excepting the die-heads which have same bolt range but different range for pipe and nipples, as indicated above.

A wide variety of work including BENT rods or pipe can be threaded on these machines. Write for illustrated bulletin which includes tables of production estimates.

OSTER THE OSTER MFG. COMPANY
2053 E. 61st St., Cleveland 3, Ohio, U.S.A.

BUILDERS OF COST REDUCING THREADING MACHINES SINCE 1893

BREVITY—Identify by IEN - 11762 if you write the maker

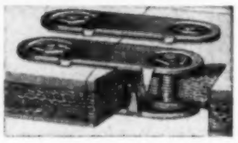
Sturtevant Laboratory Equipment meets the exacting requirements of laboratory work. They are fast and accurate...provide true samples. Rugged and dependable. Sturtevant equipment actually has all the features of full size machines plus extra accuracy and wider range of adjustment. The "Open-Door" accessibility permits quick, thorough cleaning . . . prevents the possibility of previous batches from contaminating new samples.
Investigate Sturtevant equipment for your laboratory. Write for complete details and catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASS.

BREVITY—Identify by IEN - 11763 if you write the maker

FLEXCO® BELT FASTENERS and RIP PLATES

FOR HEAVY CONVEYOR AND ELEVATOR BELTS OF ANY WIDTH



Compression Grip distributes strain over whole plate area

- ★ FLEXCO Fasteners make tight butt joints of great strength and durability.
- ★ Trough naturally, operate smoothly through take-up pulleys.
- ★ Distribute strain uniformly.
- ★ Made of Steel, "Monel," "Everdur." Also "Promal" top plates.
- ★ FLEXCO Rip Plates are for bridging soft spots and FLEXCO Fasteners for patching or joining clean straight rips.

Order From Your Supply House. Ask for Bulletin F-100

FLEXIBLE STEEL LACING CO.
4610 Lexington St., Chicago 44, Ill.

BREVITY—Identify by IEN - 11764 if you write the maker

. . . through your Honeywell Supplies Man

WISE buyers benefit from the provisions of the HSM Plan for all instrument accessories.

In the case of charts, the benefit is two-fold. (1) A continuous supply of charts means greater recording accuracy . . . eliminates the opportunity for damage and shrinkage during long storage of large stocks. (2) Planned and scheduled purchasing, under a blanket agreement, adds convenience and saves money. Both are available through your local Honeywell Supplies Man. He is as near as your phone.

Stocks maintained in Philadelphia, Cleveland, Chicago, Houston, Los Angeles and San Francisco. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa.

Honeywell
BROWN INSTRUMENTS

NEW LITERATURE—Continued

"Note the 'O' numbers on these reviews"

PIPE FITTINGS . . "Sola-Flex" bellows-type expansion joints and metal bellows; sizes, selection. Catalog 51, 40 pages. Solar Aircraft Co., 2202 Pacific Hiway, San Diego 12, Calif. IEN-01390

PLASTICS . . "Agilene" polyethylene resins; physical, thermal, chemical, electrical properties. Catalog PE-1a, 8 sheets. American Agile Corp., 5804-8 Hough Ave., Cleveland 3, Ohio IEN-01391

PLASTICS . . Extruded thermoplastics to order; picture examples of design and applications. "Extruded Plastics", 8 pages. Anchor Plastics Co., 535 Canal St., New York 13, N. Y. IEN-01392

PLIERS . . For electrical work, also splicing clamps, safety belts, tool holsters; catalog data. "Pocket Tool Guide 50", 86 pages. Mathias Klein & Sons, 3202 Belmont Ave., Chicago 18, Ill. IEN-01393

POINTING . . Machine to produce points on ¼ to ¾-in. screws; point designs, specifications. "Type 4600", 4 pages. Economy Engineering Co., 106-10 Vine St., Willoughby, Ohio IEN-01394

POLISHING . . And buffing compounds in bar, paste, spray types, also buffs; descriptions, selection. Catalog 51, 12 pages. Schaffner Mfg. Co., 49 Herron Ave., Emsworth, Pa. IEN-01395

PRESS TOOLS . . Automatic unloader for presses and other machines; operation, data on three models. "Iron Hand", 8 pages. Sahlin Eng. Co., 265-69 Ferndale St., Birmingham, Mich. IEN-01396

PRESSES . . "Utility" hydraulic presses, 4 to 10 ton; condensed specifications, typical uses. Bulletin PB-51, 4 pages. Colonial Broach Co., Box 37-A, Harper Station, Detroit 13, Mich. IEN-01397

PRESSES . . Open-back inclinable presses, 5 and 8 ton, deep throat; specifications on five models. Leaflet DTPP, 2 pages. Famco Machine Co., Holborn & 18th Sts., Racine, Wis. IEN-01398

PRESSES . . Hydraulic 20-ton unit with welded steel frame; specifications, picture examples of work. "20 Ton Press", 4 pages. Ross & Co., 1403 E. 57th St., Chicago 37, Ill. IEN-01399

PROCESSING . . Plug and shell filling materials for Jordan paper-making machines; types, properties. Folder 510, 4 pages. Noble & Wood, 45 First St., Hoosick Falls 6, N. Y. IEN-01400

PROTECTING . . Standard guards for portable grinders, sanders, grinding machines; picture review. "Wheel Guards", 4 pages. Morrison Products, 16814-18 Waterloo Rd., Cleveland 10, Ohio IEN-01401

PUMPS . . Type-G centrifugal, for chemical and process use; selection chart, specifications, dimensions. Bulletin WQ-213, 4 pages. Warren Steam Pump Co., 50 Warren St., Warren, Mass. IEN-01402

RECORD KEEPING . . Indexes with plastic or metal tabs for looseleaf catalogs; list prices. Catalog D-10, 8 pages. Buchan Loose Leaf Records, 49-53 E. Holly, Clifton Heights, Pa. IEN-01403

RECORD KEEPING . . "Dexigraph" photocopy record of "Kardex" sales records; description. Folder D-217, 6 pages. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y. IEN-01404

RECTIFYING . . Selenium units and controls for plating service; data on 15 to 6,000-amp. models. Bulletin RP-51, 12 pages. Rapid Electric Co., 2879-83 Middletown Rd., New York 61, N. Y. IEN-01405

REFRACTORIES . . Suspended fairing arch for furnace interior; cut-away views to show supports. Bulletin 651, 4 pages. Geo. P. Reintjes Co., 2515-21 Jefferson St., Kansas City 6, Mo. IEN-01406

REFRIGERATING . . Model-P evaporative condenser for Freon or ammonia. 3 to 100 ton; selection chart. Bulletin 1818-P, 4 pages. Baltimore Aircoil Co., 2521-25 Penna. Ave., Baltimore 17, Md. IEN-01407

RESEARCH . . On product and process development; description, examples, scope of service. "Production Research", 8 pages. Battelle Memorial Institute, 503-7 King Ave., Columbus 1, Ohio IEN-01408

ROCK DRILLING . . Portable electric drill with reciprocating head; description, tools, uses. Folder 510, 4 pages. Wodack Electric Tool Corp., 4625-29 W. Huron St., Chicago 44, Ill. IEN-01409

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 11765 if you write the maker

VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

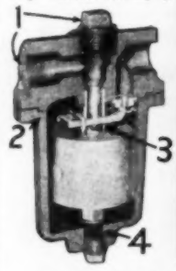
BREVITY—Identify by IEN - 11766 if you write the maker

● Ames micrometer dial indicators are the most modern available today — and naturally so because Ames policy for over 50 years has been continually to improve design, to take advantage of new materials and to utilize the most advanced manufacturing methods. They are a real aid to the quality control engineer who is trying to keep pace with today's high production schedules.

Because Ames Indicators are functionally designed, they have fewer parts than ordinary indicators. Construction is simple with functional parts being larger and more rugged and adequately supported. Operational friction is at a minimum. Thus, Ames Indicators combine extreme sensitivity and accuracy with the ability and endurance *to stay right on the job longer.*

Representatives in principal cities. **B. C. AMES CO.** 11 Ames Street Waltham 54, Mass.
Mfgrs. of Micrometer Dial Gauges • Micrometer Dial Indicators

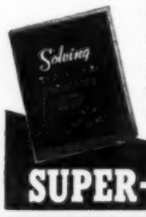
BREVITY—Identify by IEN - 11767 if you write the maker



4 Super-Silvertop STEAM TRAP FEATURES SAVE YOU MONEY

1. **SIMPLIFIED PIPING**—straight-in-line or as an elbow saving 6 fittings and 60 minutes installation time.
2. **EASY ACCESSIBILITY**—parts cleaned and replaced in a short time without removing trap from the line.
3. **GUIDED BUCKET**—Hexagonal tube guides bucket, reducing bucket damage.
4. **VALVE AND SEAT EASILY REMOVED**—held in place by a clamp and 2 screws.

Check these four advantages in your present steam trap, then write for your free copy of "Solving Steam Trap Problems," telling of many more Super-Silvertop steam trap economies.



THE V. D. ANDERSON COMPANY
1931 West 96th Street • Cleveland 2, Ohio
In Canada—Bawden Industries, Limited, Toronto

SUPER-SILVERTOP STEAM TRAPS

BREVITY—Identify by IEN - 11768 if you write the maker

FLEXTOP • FLEXTOP • FLEXTOP

New Emulsified Roof Coating Won't Alligator, Crack or Check

Carey FLEXTOP

Outperforms more expensive coatings! Tough, flexible, long-lasting—will not alligator, blister, crack, flake or check. Cuts maintenance to the bone! Contains no volatile solvents—non-inflammable, safe to store or use anywhere! Write or wire for free applied sample and informative bulletin.

One Coat Covers ...Saves Time and Labor!

Carey
The Philip Carey Mfg. Company
Lockland, Cincinnati 15, Ohio

BREVITY—Identify by IEN - 11769 If you write the maker

COSMOLINE COATED GUN COMPLETELY DEGREASED

IN LESS THAN 4 MINUTES

Four 20mm. guns heavily coated with Cosmoline are raised from the degreaser in a clean, dry condition, ready for subsequent operations.

WITH A PHILLIPS *Electric* VAPOR DEGREASER

HERE was a really tough metal cleaning problem. Cline Electric Manufacturing Company, Chicago, had to remove Cosmoline from 20mm. guns before modification operations on the guns. Cline purchased a Phillips electric batch-type degreaser to handle the job. As a result sixteen guns are being degreased per hour at a savings of 85% on cleaning costs per gun.

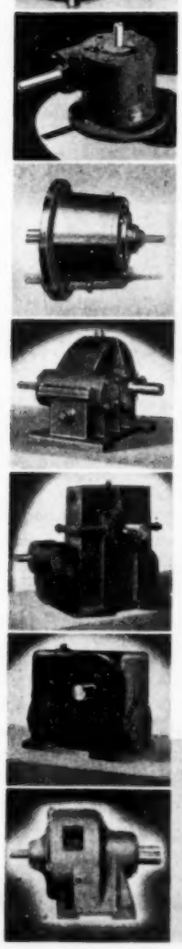
Here is another instance of how Phillips degreasers cut costs through faster, more thorough, more economical metal cleaning. For the answer to your degreasing problems, check with Phillips.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

BREVITY—Identify by IEN - 11770 If you write the maker

widest range of designs and sizes from 1/100 to 85 hp



If your speed reducer needs are within the fractional through 85 hp range . . . if your required ratios are from 1.1:1 through 50,000:1 . . . if your maximum output torque must be between 32 and 113,000 in. lbs., Winsmith is the only name you need remember.

Only Winsmith covers this range so completely. Only Winsmith has so thoroughly standardized this range in a carefully graduated series of sizes.

And within this range . . . *from this one source* . . . you have the widest diversity of sizes and shaft locations in the worm, helical and worm-helical types, *plus* the unrivaled scope of the Winsmith patented differential gear design.

Yes, Winsmith is an important name to remember in speed reducers. It means so much to the design engineer in fulfilling his exacting needs. It means so much to the user in its exacting performance.

FOR THE FACTS: Request "Save Through Standardization" folder.

WINSMITH, Inc.
10 DAVIS STREET
Springville (Erie County), N. Y.

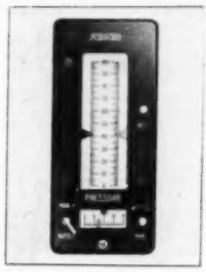
50th Winsmith Anniversary

WINSMITH SPEED REDUCERS

BREVITY—Identify by IEN - 11772 If you write the maker

CONTROL . . Pneumatic instrument regulates flow, pressure, temperature

Source: FOXBORO CO.
42 Neponset Ave., Foxboro, Mass.



Needs only a little space

Consotrol is a new instrument in the company's line of pneumatic equipment to indicate conditions and regulate flow of control-air between 3 and 15 lb. to a diaphragm-operated valve. The instrument is actuated by any standard pneumatic transmitter to control process variables such as flow, pressure, temperature. The instrument measures 3⅜ by about 7¼ in. and mounts an indicator scale with the same length as that provided in 12-in. circular charts. It slides into place in a panel, can be drawn out, when set in manual position, for inspection and maintenance. Pneumatic connections are made through flexible non-metallic tubes to permit the pull-out action.

Control point is set at a small knob on the right-hand face of the housing. The setting is positive without backlash, lost motion or drift. A flag that centers on a target on the horizontal pressure scale near the bottom of the housing face indicates correct position for bumpless transfer between manual and automatic operation in either direction. A valve-position indicator below this target operates continuously for both automatic and manual control settings.

Transfer is actually made between automatic operation by turning a lever on the left-hand lower corner of the housing. Manual control is effected by turning a knob at the lower right-hand corner of the housing. This knob actuates a pilot-operated pressure control that is free from drift.

Bulletin 445, 4 pages, presents illustrated point-by-point description of the instrument, presents a pneumatic circuit diagram, shows typical installation, indicates position in a circuit in relation to others making up a basic control.

BREVITY—Identify by IEN - 11773 If you write the maker

LIGHTING . . Floodlight fixture, mercury vapor lamp, for outdoor areas

Source: NEPO MFG. CO.
525-29 S. Wells St., Chicago 7, Ill.

Bright light issues

The glass bowl in this new lighting fixture is made of outdoor crystal glass with a stippled design to diffuse the light. It carries an 18-gage polished Alzak aluminum reflector spun in place and permanently sealed. A cast aluminum slip-fitter and hood complete the rustproof weatherproof unit.

Various types of bracket and pole and clamp assemblies are available for outdoor mounting to illuminate terminals, docks, piers, parking lots, yards, tracks, work areas. The fixture takes EH-1 and JH-1 color-corrected lamps. It can be used with an AH-1 lamp by addition of a special socket bracket.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11774 If you write the maker

Sperry

REFLECTOSCOPE

SAVES TIME
MATERIAL
MONEY

PUT SOUND TO WORK

DETECT INTERNAL FLAWS IN METAL AT LOW COST

Ultrasonic vibrations penetrate up to 30 feet to "see" internal defects in raw stock and finished parts. TEST NEW MATERIAL at the mill PRIOR TO PROCESSING. Improve quality and customer acceptance; avoid wasted time and man-hours from faulty materials. QUALITY CONTROL of work in progress. MAINTENANCE INSPECTION to detect fatigue fractures. You'll detect internal flaws more effectively at lower cost with a Reflectoscope. For sale, rent or lease. Protect and improve your reputation for fine quality — eliminate service failures. SEND TODAY for your free copy of descriptive booklet 50-105.

Sperry SPERRY PRODUCTS, INC.
DANBURY, CONNECTICUT

BREVITY—Identify by IEN - 11775 If you write the maker

MADE TO ORDER ...at savings to you!

SYLPHON stainless steel bellows assemblies

● Used in many ways—where there's a design problem involving control of temperatures or pressures. They open and close valves, dampers, etc., absorb expansion, have many more uses. Technical help in developing assemblies for your requirements—exactly, accurately. Complete manufacturing facilities save you time and money. Stainless steel, other metals. Wide size range. Write for Catalog VN-1200.

FULTON SYLPHON DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representative, Darling Brothers, Montreal

BREVITY—Identify by IEN - 11776 If you write the maker

Pressure Reducing Costs

When You Use Masoneilan Regulators

You'll find thousands of Masoneilan Regulators in hundreds of plants giving accurate pressure reducing service in various types of application.

It stops "singing" and splashing from fixtures without cutting down flow . . . reduces strain on plumbing. Body Ratings: 150 psi . . . Reduced Pressure Ranges: sizes ½" to 1" — 10-60 psi; sizes 1¼" to 2" — 10-40; 30-60 psi; size 2" — 15-40; 30-60 psi.

Also available for air service in sizes from ⅛" to 1".

Your local Mason-Neilan industrial distributor is ready to serve you from his stock

MASON-NEILAN REGULATOR COMPANY
1188 ADAMS STREET, BOSTON 24, MASS., U. S. A.

BREVITY—Identify by IEN - 11777 If you write the maker

CASTELL

LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL (black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

A.W. FABER-CASTELL PENCIL COMPANY, INC.

BREVITY—Identify by IEN - 11778 if you write the maker

Over 17,000 copies now in use!

THE RELAY DATA YOU NEED . . .

at your Fingertips!

This famous 640-page Struthers-Dunn Relay Engineering Handbook answers your questions about relays—explains fundamental types—tells what types to use for specific applications—serves as a comprehensive guide to relay circuits, relay selection, application, use and maintenance. Contains over 1100 illustrations. Limp bound in convenient pocket size. Price $3 per copy.

STRUTHERS-DUNN

5,348 RELAY TYPES

• POWER • SPECIAL-PURPOSE • SMALL •
• SEQUENCE • LATCH • SENSITIVE •
• TIMERS • INSTRUMENT-CONTROLLED •

Struthers-Dunn, Inc., 150 N. 13th St., Philadelphia 7, Pa.

BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
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MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

BREVITY—Identify by IEN - 11779 if you write the maker

Convince Yourself WITH THIS TEST!

See How VOLAX Removes Printing Ink COMPLETELY without Irritating Skin!

1. Ask a pressman to dip his hands in printing ink — it's stubborn . . . hard to remove.

2. Have him use VOLAX Hand Cleaner—ink's off in a jiffy—and safely too!

Your DOLGE Service Man will be glad to demonstrate

VOLAX is designed for heavy-duty skin cleansing. It contains mild soaps; water softener and friable volcanic ash — removes ground-in printer's ink with a gentle, non-irritating action. VOLAX is the specific cleaner for tough, ground-in dirt and ink discoloration.

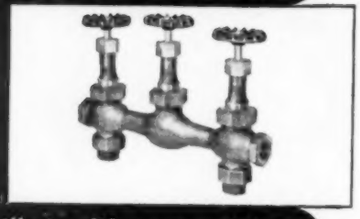
VOLAX

dependable DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 11780 if you write the maker

The Compactness of HONEYWELL BY-PASSES



will simplify your piping

The Honeywell By-Pass is a compact, neat, easily-installed means of by-passing control valves, traps and other pressure units. It simplifies piping arrangements by eliminating a multitude of joints, nipples and elbows . . . by using a minimum of space . . . by saving time . . . by minimizing maintenance.

Available in Bronze as follows: sizes ½ to 2 inches . . . Bronze or Stainless trim . . . union bonnet . . . screwed ends . . . 150-300 lbs. . . . from $21 to $116. Available in Cast Steel as follows: 1 to 2 inches . . . union bonnet for 1" and 1¼", bolted bonnet for 1½" and 2" . . . Stainless trim . . . screwed or flanged ends . . . 300-600 lbs. . . . from $228 to $426. Send in your order, today!

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell VALVE PRODUCTS

NEW LITERATURE—Continued

"Arranged by subject in A-Z order"

ROLLING . . Y-type reversing cold strip mill; design, operation, reduction schedules. Bulletin 1-D-51, 16 pages. Mackintosh-Hemphill Co., 899-903 Bingham St., Pittsburgh 3, Pa. **IEN-01410**

RUBBER PRODUCTS . . Convoluted boots, accordion seals, bellows, sleeves; product examples, drawings. "Our Specialty", 4 pages. Midwest Rubber Co., 17225-29 Conant, Detroit 12, Mich. **IEN-01411**

SAWING . . Hand and power hacksaw blades, bandsaw blades, pipe tools and machines, steel; data, list prices. Catalog, 26 sheets. Capewell Mfg. Co., 58-62 Governor St., Hartford 2, Conn. **IEN-01412**

SCREW DRIVING . . Pneumatic power tools; models, selection, bits, impact wrenches, application notes. Bulletin 613, 36 pages. Keller Tool Co., 1948 Parks St., Grand Haven, Mich. **IEN-01413**

SEALING . . Inflatable rubber-fabric strip, originally for aircraft; drawings, description. "Inflatable Strip Seal", 4 pages. B. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio **IEN-01414**

SEALING . . Asbestos and fibre sheet packings; descriptions, service recommendations. Bulletin, "Sheet Packings", 8 pages. Raybestos-Manhattan Inc., 47 Thomas St., Manheim, Pa. **IEN-01415**

SEPARATED . . Stationary centrifugal entrainment separators for air, steam, vapor, gas; models, operation. Bulletin G-51, 4 pages. Centrifix Corp., 3639 Payne Ave., Cleveland 14, Ohio **IEN-01416**

SEPARATING . . Magnetic separators and magnets; illustrated review. Catalog C-5600-B, 12 pages. Dings Magnetic Separator Co., 4738-42 W. Electric Ave., Milwaukee 46, Wis. **IEN-01417**

SHIPPING . . Wirebound shipping containers, pallet boxes; design points, application examples. "General Box", 12 pages. General Box Co., 510 N. Dearborn St., Chicago 10, Ill. **IEN-01418**

SIGNS . . Business and building signs; picture examples, notes on design. Book, "Signs", letterhead request, 50 pages. Cutler Sign Advertising Co., 2024-28 N. 22nd, Philadelphia 21, Pa. **IEN-01419**

STAMPINGS . . Small parts in metal to ⅛ in. with tapped openings; examples with notes on design. Bulletin 851, 4 pages. Mohawk Mfg. Co., 54-58 Hamlin St., Middletown, Conn. **IEN-01420**

STAPLING . . Machine to assemble slat crates and bases; illustrated models and setups. Bulletin 167-DS, 6 pages. Saranac Machine Co., 851 Benning St., Benton Harbor, Mich. **IEN-01421**

STORING . . Steel money chests to protect against holdup or burglary; sectional views, descriptions. "Money Chests", 18 pages, Herring-Hall-Marvin Safe Co., 1950 Grand, Hamilton, Ohio **IEN-01422**

STORING . . Steel storage bins for bulk material, 10 to 45 cu. yd.; drawings, dimensions. Folder 629, 4 pages. Pioneer Engineering Works, 1513-17 Central Ave., Minneapolis 13, Minn. **IEN-01423**

SWITCHES . . "Meletron" pressure and vacuum switches; operating data, ratings, uses to 12,000 psi. Catalog 1-MB-1, 32 pages. Barksdale Valves, 1564 E. Slauson, Los Angeles 11, Calif. **IEN-01424**

SWITCHES . . Mercury switches for product use; ratings on five types, application suggestions, mounting. Catalog Hg-1, 4 pages. Micro Switch, 30 E. Spring St., Freeport, Ill. **IEN-01425**

TESTING . . Radiation counter tubes; ratings, characteristics. Catalog 51-T, letterhead request, 28 pages. Anton Electronic Laboratories, 1228-36 Flushing Ave., Brooklyn 37, N. Y. **IEN-01426**

TESTING . . Transducer for motion to 2.5 in.; description, circuit. Sheets 55 and 56, letterhead request, 6 pages. Automatic Temperature Control, 5212 Pulaski Ave., Philadelphia 44, Pa. **IEN-01427**

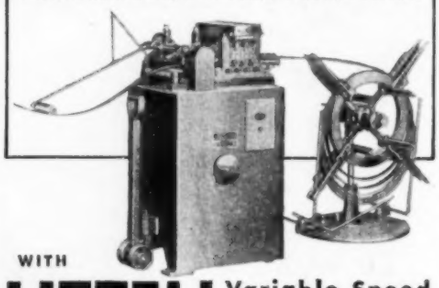
TESTING . . Picture book shows facilities of new Washington plant for laboratory equipment. Booklet, 16 pages. Fisher Scientific Co., 7720-24 Woodbury Drive., Silver Spring, Md. **IEN-01428**

TESTING . . General Electric "Zahn" viscosimeter; illustrated operating procedure. "Zahn Viscosimeter", 8 pages. Henry A. Gardner Laboratory, 4725 Elm St., Bethesda 14, Md. **IEN-01429**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 11781 if you write the maker

STRAIGHTEN COIL STOCK FOR PRESSES, SHEARS OR SLITTERS



WITH LITTELL Variable Speed STRAIGHTENING MACHINES

Output rises, costs drop when coil stock is fed to the press, the shear, or the slitter through a Littell Straightening Machine. Coil stock comes out of a Littell Straightener flat, with curvature removed. Equipped with variable speed transmissions, Littell Straighteners are easily adjusted to meet a wide range of speed requirements. Thirteen medium and heavy duty models straighten coil stock of all standard widths and thickness.

WRITE FOR CATALOG

F. J. LITTELL MACHINE CO.

ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES

District Offices: Detroit, Cleveland

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

BREVITY—Identify by IEN - 11782 if you write the maker

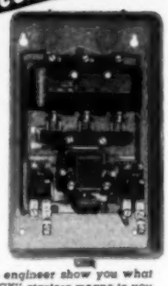
Setting new standards in starter performance

The CLARK TYPE "CY" AC MAGNETIC MOTOR STARTERS with the NEW ARC QUENCHING PRINCIPLE

These rugged magnetic starters provide the extra protection and dependable operation of "Mill-Type" heavy-duty construction and design.

- No tools needed to inspect contacts. Components easily removed.
- Melting alloy-type overload relays.
- Vertical lift clapper type magnet uses no springs.

another CLARK first!



The CLARK TYPE "CY" Starters feature the combined use of strong multi-turn magnetic blowouts with twin-break contacts. They employ an entirely new principle of arc interruption. The blowout coils are concentric with the contacts. The magnetic field quenches the arc either by lengthening or confining it. By forced rotation the arc moves continually from a hot to a cold spot—minimizing burning or pitting of contacts. The solid upper arc shield prevents the accumulation of hot gases between wiring terminals—minimizing phase-to-phase failures.

Let a CLARK application engineer show you what this new line of CLARK "CY" starters means to you in increased production and lower maintenance.

THE CLARK CONTROLLER CO.

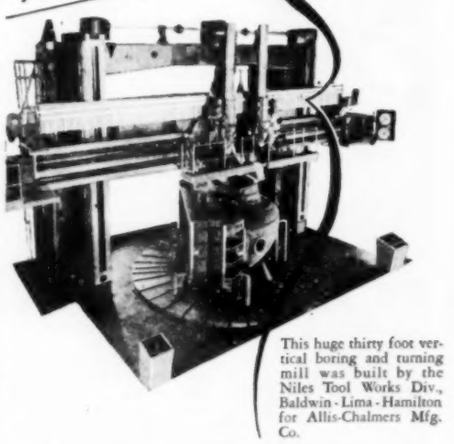
ENGINEERED ELECTRICAL CONTROL — 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 11783 if you write the maker

ELECTRIC FEEDRAIL®

Partial view of 79 pole, multiple conductor Feedrail trolley busway system that distributes current for power and control of this 30-ft. giant mill. Except for critical hand lever adjustments, all control is through buttons and selector switches located in remote dual console stations.

"Nerves" for a 30-ft. giant



This huge thirty foot vertical boring and turning mill was built by the Niles Tool Works Div., Baldwin-Lima-Hamilton for Allis-Chalmers Mfg. Co.

Giant thirty foot boring mills are not built every day. When they are, precision control is essential. A 79 pole multiple conductor Feedrail provides the "nerve system" for finger-tip control and dependable, unfailing power supply for this massive machine.

Every day Feedrail is solving power and control problems. Moving trolley outlets in an enclosed track roll with electric tools which must follow work. Power machines move in and out of work centers quickly, and produce more work in less time. Feedrail flexibility is engineered into standardized units that assemble to give a "tailored to fit" power supply system. Write for literature.

Sold by leading electrical distributors.

46-C

Never Becomes Obsolete

ELECTRIC FEEDRAIL FEEDRAIL CORPORATION

Subsidiary of Russell & Stott Company, Inc.

125 BARCLAY STREET • NEW YORK 7, N. Y.

BREVITY—Identify by IEN - 11785 If you write the maker

ALLIGATOR

CONVEYOR BELT LACING

Every Tooth A Vise*

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width*.

Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

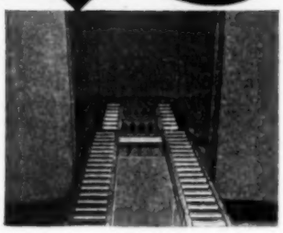
BREVITY—Identify by IEN - 11786 If you write the maker

Cut Loading Time in HALF!

WITH

ISLAND PALLET DOLLIES

Puts an end to the pallet handling problem.



Fork trucks can't enter a reefer car! That's where the Pallet Dolly takes over. Staggered bottom rollers eliminate trouble from floor racks. Has 14 gauge rollers on 4" centers... 2 x 2 x ¼ angle frame...built to handle your pallet...all parts are standard equipment. Write for detailed bulletin RTD-1 A.

Dept. IE-11.

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, New York

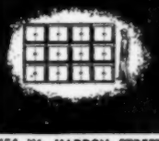
BREVITY—Identify by IEN - 11787 If you write the maker

GRIEVE-HENDRY PORTABLE ELECTRIC OVENS...

Standard Models For Every Special Need!

Model CR-1
10 cu. ft. capacity—30" wide x 25" deep x 24" high. Removable shelves and drip pan. **$79.50** f.o.b. Chicago

Portable. Costs less than 5c per hour to operate. Adjustable temperature control to 225° F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required.



Can be used in a group or bank. Use them on the production line—save handling—hauling.

Other standard models with temperature ranges to 1000°F. available. Write for literature.

GRIEVE-HENDRY CO., INC.
1654 W. HADDON STREET CHICAGO 22, ILL.

BREVITY—Identify by IEN - 11788 If you write the maker

CLEANING . . Wet abrasive machine for dies, glass and rubber molds

Source: AMERICAN WHEELABRATOR & EQUIPMENT CORP. 553-57 S. Byrkit St., Mishawaka, Ind.

Work car is in rinse chamber

Precision work with thin edges, sharp corners such as press dies, molds for manufacture of glass, rubber and plastic products, can be cleaned in this new Liquamatte wet-abrasive-blast machine. The work is mounted on a car carrying a rotating table that moves between the rinse and loading compartment to the right and the closed cleaning compartment to the left. In the Model-43 machine illustrated the two compartments are each about 4 ft. in width by 3 ft. from front to back. The machine stands about 6 ft., 9 in. in height.

The operator moves a knee lever at the front of the machine to admit compressed air at 80 to 100 lb. to the blast nozzle. This air supplements the action of a vertical motor-driven centrifugal circulating pump that handles the slurry from a supply tank to the nozzle and back to the tank in a closed circuit. The operator can observe progress through a window at the front and can manipulate the work by reaching through gauntlet-equipped openings. Small work can be introduced and removed through these openings so the door at the right-hand side of the cleaning compartment need not be moved.

The pump assembles in a well at the back of the machine from where it can be removed and replaced. A reset timer is employed in connection with the pump to accumulate the number of blasting hours that the abrasive has been in the machine and indicate when it needs replacement. An air ejector is available to blow spent slurry out through a length of hose prior to introduction of water and new abrasive. The cleaning chamber is ventilated by an exhaust blower that moves the air through a pair of filters. The filters are washed by water sprays. Sprays also keep the observation window clean. A motor-driven circulating pump is provided for the rinse section to handle rust-inhibited liquids when ferrous work is cleaned.

BREVITY—Identify by IEN - 11789 If you write the maker

RECTIFYING . . Selenium unit assembles ¼ in. cell elements

Source: ELECTRONIC DEVICES INC. 427-31 12th St., Dept. IEN, Brooklyn 15, N. Y.

New Minisel line

Ratings are to 25,000-volt ac. input per single stack and to 20-ma. dc. output for this new sub-miniature selenium rectifier. It is built up of matched ¼-in. round selenium rectifier cells enclosed in Bakelite, glass or metal. The cells are manufactured under strict control that limits variance in characteristics between units and from one assembly to the next.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11790 If you write the maker

Reduce your refractory Costs with...

Johns-Manville FIRECRETE*

Cast your own refractory shapes and linings with J-M Firecrete . . . ready within 24 hours.

3X Firecrete—3000F Refractory Concrete, for linings and special shapes subjected to *3000F soaking temperatures.*

H. T. Firecrete—High Heat Duty Refractory Concrete for exposure to 2400F-2800F.

Standard Firecrete—Intermediate Heat Duty Refractory Concrete for monolithic constructions to 2400F.

L. W. Firecrete—Insulating Refractory Concrete—For direct exposure to 2400F.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE*

Build and repair refractory linings with J-M Blazecrete. Applied by slap troweling or gunning. Ready for use overnight.

3X Blazecrete—3000F Hydraulic Setting Refractory for heavy patching. *Withstands soaking heat to 3000F.*

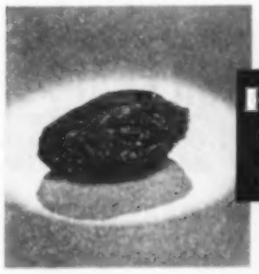
Standard Blazecrete—Intermediate Heat Duty Hydraulic Setting Refractory. Builds and repairs linings up to 2400F.

L. W. Blazecrete—Hydraulic Setting Insulating Refractory for temperatures to 2000F.

For further information, write Johns-Manville, Box 290, New York 16, N. Y.

JM Johns-Manville REFRACTORY PRODUCTS

BREVITY—Identify by IEN - 11791 If you write the maker



PICTURE OF A PRUNE

DRIED UP, isn't it? Just like wood, paper, textiles, leather, foodstuffs or other hygroscopic materials you process or store during the winter when indoor relative humidities go as low as 10%. Weight loss, quality loss, production difficulties—you know the problems.

Armstrong Steam Humidifiers end dry air problems, *automatically* maintain any relative humidity you require. Installed like unit heaters they operate for a few pennies per day. Priced as low as $182 *complete* for a unit to humidify up to 40,000 cu. ft. SATISFACTION GUARANTEED. Order now for a full season's benefit.

SEND FOR BULLETIN 1773

12 pages packed with useful information, tables, diagrams, data, prices. Yours on request.

ARMSTRONG MACHINE WORKS
888 Maple St., Three Rivers, Michigan

BREVITY—Identify by IEN - 11792 If you write the maker

FASTEST WAY TO MAKE SMALL PARTS *and it costs less*

USE **Starrett** PRECISION GROUND DIE AND FLAT STOCK

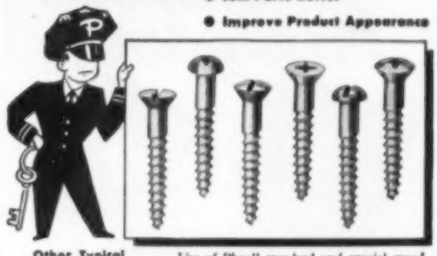
Starrett Precision Ground Flat Stock is ideal for tool tools; die, jig, fixture and machine parts; templates; shims; gages; punch dies, etc. Made from high grade annealed tool steel cut lengthwise from the sheet and ground to within .001" in thickness. 18-inch lengths, widths from ½ to 6 inches, thicknesses from 1/64" to 1" and more. Each piece individually wrapped and marked with size, type and heat treating instructions. Write for New Ground Flat Stock Folder and New Chart "N" giving Formulas for both Oil and Water Hardening.

Starrett THE L. S. STARRETT COMPANY · ATHOL, MASS., U.S.A.
WORLD'S GREATEST TOOLMAKERS
BUY THROUGH YOUR DISTRIBUTOR

BREVITY—Identify by IEN - 11793 If you write the maker

Pheoll WOOD SCREWS

- **Reduce Assembly Time**
- **Join Parts Better**
- **Improve Product Appearance**



Other Typical Pheoll Products

Machine Screws, Tapping Screws, Cap Screws, Set Screws, Stove Bolts, Machine Bolts, Machine Screw Nuts, Phillips Recessed Head Screws and Bolts, Sems (Lock Washer Screws), Special Cold Headed and Threaded Products.

Use of Pheoll standard and special wood screws reduces overall assembly time and provides the means for joining parts tighter and stronger. Also, they improve the final appearance of your products.

These quality screws are made from cold forged blanks—individually turned, providing clean cutting edges free from nicks and burrs. The sharp gimlet-type point penetrates the wood for a straight and rapid driving start. Spiral threads seat firmly in the wood, providing a rigid bond that resists strain and vibration. Pheoll wood screws are available in slotted or Phillips recessed head types—in a broad range of sizes—all head styles, different metals and in all finishes. Ample stocks of steel and brass wood screws are always carried in stock.

Pheoll MANUFACTURING COMPANY · 5700 Roosevelt Road · Chicago 50, Illinois
SCREWS · BOLTS · NUTS
Industrial Fasteners and Molding Devices

BREVITY—Identify by IEN - 11794 if you write the maker

ACCO SLING CHAIN Adjuster

FOR UNBALANCED LOADS

a New Idea!

Now any load can be lifted the easiest way it can be picked up. And perfect balance is maintained every time.

Sling hooks are attached to load, saddle moved to correct position along chain's links which fit in pockets of the ACCO SLING CHAIN ADJUSTER. Then load is ready for lifting. Twisting or spiking of chain is unnecessary. Made for ½", ⅜", ⅝" and ¾" chain.

Adds greater safety on level lifts — Prevents slippage on angle lifts — Provides control of unbalanced lifts

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AMERICAN CHAIN DIVISION
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In Business for Your Safety

"Industrially Better" SLING CHAINS

BREVITY—Identify by IEN - 11795 if you write the maker

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!

Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The Sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

BUSHINGS MADE IN FOLLOWING SIZES:
3/16, 1/4, 5/16, 3/8, 7/16,
1/2, 5/8, 3/4, 1"

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STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD, DETROIT 19, MICH.

BREVITY—Identify by IEN - 11796 if you write the maker

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60 pages of valuable information describing the line of Honeywell Automatic Controls

THE KIND of information you want, right at your finger tips . . . on pneumatic, electric and electronic non-indicating controls for temperature, pressure and humidity.

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Brown Instruments

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"Is your company's new catalog listed?"

TESTING . . Instrument amplifier with high-impedance input; description, uses. "Phantom Repeater 102", 4 pages. Keithley Instruments, 3866-70 Carnegie Ave., Cleveland 15, Ohio **IEN-01430**

THREADING . . Automatic machine to thread studs; description, details on ½ and 1-in. sizes. "Stud Threader", 2 pages. Kent Machine Co., 111-15 Portage Terrace, Cuyahoga Falls, Ohio **IEN-01431**

TRAPS . . Selection data on company's impulse steam trap for from autoclaves to vulcanizers. Bulletin T-1750, 20 pages. Yarnall-Waring Co., 122 Mermaid Lane, Philadelphia 18, Pa. **IEN-01432**

TRUCK ATTACHMENTS . . "Hopto" hydraulic power-takeoff crane-shovel-trench hoe unit; reach diagrams. Bulletin 19512, 4 pages. Badger Machine Co., 51 Front St., Winona, Minn. **IEN-01433**

TRUCKS . . Type-JOM fork lift truck, 7,000 to 10,000 lb. capacity; specifications, turn diagrams. Bulletin 1328, 6 pages. Baker-Raulang Co., 1248-52 W. 80th St., Cleveland 2, Ohio **IEN-01434**

TRUCKS . . Hand trucks for food service, food handling, maintenance use; condensed data. Bulletin 51-HR, 8 pages. Nutting Truck and Caster Co., 2010 W. Division St., Faribault, Minn. **IEN-01435**

VALVES . . Pressure relief units; operating test data, notes on manifold discharge piping use. Manual 51-B, 36 pages. Farris Engineering Corp., 550 Commercial Ave., Palisade Park, N. J. **IEN-01436**

VALVES . . "Powreactor Dome" regulating valves for air, gas, liquids to 6,000 lb.; operation, selection. Bulletin 123-AR-1, 16 pages. Grove Regulator Co., 6527-31 Hollis St., Oakland 8, Calif. **IEN-01437**

VALVES . . Cam-type solenoid valves for shut-off service in fuel-oil lines; sizes, operating description. Catalog 710, 2 pages. Hauck Mfg. Co., 126-34 Tenth St., Brooklyn 15, N. Y. **IEN-01438**

VALVES . . Pressure-regulating units, 300 lb. steam, 600 lb. air; data on ½ to 6-in. sizes, hookups. Bulletin 751, 4 pages. O. C. Keckley Co., 402 W. Madison St., Chicago 6, Ill. **IEN-01439**

VALVES . . Relief units for steam, air, gas; sizes, capacity charts. Bulletin 851, letterhead request, 16 pages. Marine & Industrial Products, 1148-52 W. Marquette, Chicago 21, Ill. **IEN-01440**

VALVES . . Vacuum breaker units for tanks and other vessels; relief capacity table on ½ to 3-in. units. Sheet 413-1, 2 pages. Minn.-Honeywell Regulator, 4456 Wayne, Philadelphia 40, Pa. **IEN-01441**

VALVES . . Hydraulic operating valves; sectional views, dimensions on 138 models, mostly 4-way. Catalog 203, 28 pages. Rivett Lathe & Grinder, 20-24 Riverview Rd., Brighton 35, Mass. **IEN-01442**

VALVES . . Regulating valves, separators, desuperheaters, feedwater heaters; condensed details. "Power Plant Equipment", 12 pages. Swartwout Co., 18521 Euclid, Cleveland 12, Ohio **IEN-01443**

VALVES . . Venting units for tanks of volatile liquids; descriptions, sizes, flame arrestors. Bulletin CP-2001, 32 pages. Vapor Recovery Systems, 2818-22 N. Alameda, Compton, Calif. **IEN-01444**

WATER TREATING . . "Ultra De-Ionizer" to remove all ionizable impurities from water; operating details. Bulletin 512, 4 pages. Elgin Softener Corp., 132-36 N. Grove Ave., Elgin, Ill. **IEN-01445**

WEIGHING . . Bench and floor platform scales, 12 to 500 lb.; specifications. Sheets 3295, 3260, 3261, 3262, 2 pages each. Exact Weight Scale Co., 942-46 W. Fifth Ave., Columbus 8, Ohio **IEN-01446**

WINDING . . Machines to wind armature and other electrical coils; data summaries. "Coil Winding Machines", 32 pages. Geo. Stevens Mfg. Co., Peterson at Pulaski Rd., Chicago 30, Ill. **IEN-01447**

WINDOWS . . "Fenestra" steel windows; illustrated steps in hot dip-galvanizing and Bonderizing. Booklet TE-10, 12 pages. Detroit Steel Products Co., 3129 Griffin St., Detroit 11, Mich. **IEN-01448**

WOOD WORKING . . Machine to plane or cut pattern molding in stock to 4 by 6 in.; description, examples. "M & M Molder-Planer", 4 pages. Eagle Sales Co., 94-98 Dunbar St., Keene, N. H. **IEN-01449**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

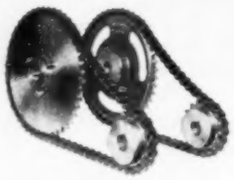
BREVITY—Identify by IEN - 11797 if you write the maker

DARNELL CASTERS

SAVE
EQUIPMENT....
FLOORS....

DARNELL CORP. LTD. Long Beach 4, Calif.
60 Walker St., New York 13, N. Y.
36 N. Clinton, Chicago 6, Ill.

BREVITY—Identify by IEN - 11798 if you write the maker



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Sprockets and Roller Chain
STOCK OR SPECIALS

Utilize Cullman Sprockets and Roller Chains supplied promptly from Cullman's adequate stocks. Cullman Wheel Co. has been supplying high efficiency drives of low first cost and long service life throughout its 56 years of specialization in designing and manufacturing dependable transmission units and components. These factors are the common objective of machine designers and purchasers. Orders for specials are delivered quickly.

Send us your prints and we will quote promptly.
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1357 West Altgeld St.
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CULLMAN
power transmission
SPROCKETS and ROLLER CHAIN

BREVITY—Identify by IEN - 11799 if you write the maker

No Special Wiring...

WITH

IBM

ELECTRONIC
TIME
CONTROL

ELECTRONIC—*no special clock or signal wiring.* Time systems operate and are supervised by electronics over regular AC circuits.

ECONOMICAL—low installation cost. Time units can be relocated without special clock or signal wiring.

EFFICIENT—automatic coordination of clocks, recorders, and signals to the second. Uniform time is assured in all units.

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INTERNATIONAL BUSINESS MACHINES CORPORATION
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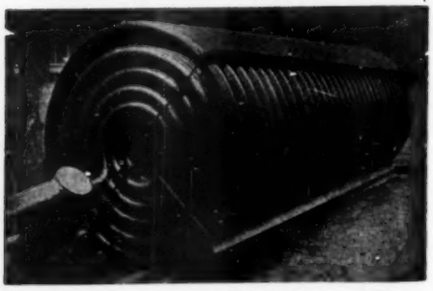
BREVITY—Identify by IEN - 11800 if you write the maker

PITTSBURGH COILS
a air pressure tested



Pipe Coils—Bends—Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Bends, Boiler Tubes. "Let us quote!"

Ask for Pipe Coil Data Book

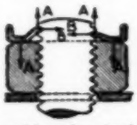
Pittsburgh Pipe Coil & Bending Company
Division of Enameled Metals Company
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA

BREVITY—Identify by IEN - 11801 If you write the maker

Both Nut and Bolt are LOCKED TIGHT

Low cost—fast assembly

Because PALNUT Lock Nuts apply on top of ordinary nuts, there are no interfering parts within the nut or between the nut and load to prevent or retard the full application of bolt stress for maximum bolt loading efficiency. A properly tightened nut, locked with a PALNUT, provides a completely vibration-proof, rugged assembly which stays trouble-free during the entire life of your products.



Powerful spring tension (A-A) is exerted upward on the bolt threads and downward on the ordinary nut, while slotted jaws (B-B) close in and grip the bolt like a chuck.

PALNUT Trademark **LOCK NUTS**

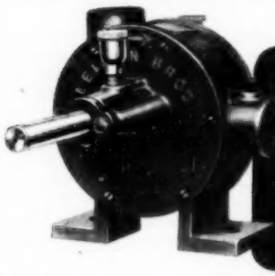
Write for samples and data
THE PALNUT COMPANY
59 Cordier St.
Irvington 11, N. J.

BREVITY—Identify by IEN - 11802 If you write the maker

All these are "LOW PRESSURE" AIR JOBS--

Agitating—blowing—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—feeding—leak-testing—pressure-boosting—materials transfer, etc.

-handled Better, at Lower Cost, with



LEIMAN AIR PUMPS
(Pressure, Vacuum, Suction)

ON hundreds of air applications requiring pressures lower than 25 p.s.i. or vacuum under 29" mercury, Leiman Rotary Positive Air Pumps are providing these advantages over any other source of air:

- Even, pulseless flow of air.
- No expensive installation, no tanks.
- Air available instantly—no waiting to build up pressure.
- No waste — runs only when air is needed.
- Very compact and portable—plug in and use anywhere.
- Provides both pressure and vacuum-suction from same source, by switching from outlet to inlet.
- Extremely quiet and trouble-free for years.
- Little or no maintenance.

What is your operation or problem? Send us details for recommendation, without obligation.

TAKE UP THEIR OWN WEAR

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, even after 15 and 20 years' steady service.

WRITE on firm letterhead for free catalog and application folder.

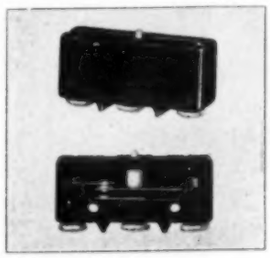
LEIMAN BROS., Inc. 166 Christie Street, Newark 5, N. J.

AIR PUMPS · AIR MOTORS · SAND BLASTS · DUST COLLECTORS

BREVITY—Identify by IEN - 11804 If you write the maker

SWITCH . . Sensitive pushbutton rates to 20 amp. on 110 volt ac.

Source: GENERAL CONTROL CO.
1210-B Soldiers Field Road, Boston 34, Mass.



The pushbutton to operate this new plastic-enclosed switch is located centrally in one housing face. It applies directly on the spring carrying the movable contact in the single-pole double-throw spring-return design. Mounting dimensions are the same for the company's similar snap-acting switches. Overall dimensions are about 2 in. in length by ⅞ in. in height. The mounting holes are on 1-in. spacing.

BREVITY—Identify by IEN - 11805 If you write the maker

PAINTING . . Plastic base material for masonry, plaster, fibrous surfaces

Source: MARVELITE PAINT CO.
1235-39 Light St., Baltimore 30, Md.

Single gallon lists at $3.85

Nulon-X is a new paint based on Bakelite styrene emulsion for application on interior and exterior building surfaces to decorate and to seal against penetration by moisture. Application is by brushing, spraying, roller or knife coating, dip coating. Coverage is about 275 sq. ft. per gal. on concrete, 350 sq. ft. per gal. on plaster.

The paint is self priming so a single coat is generally sufficient to obtain good sealing action and appearance. It can be applied over sound paints of other types and serves also as a first-class undercoat for these paints. It is packaged, ready to use, is available in a range of colors in addition to white and transparent. It is color fast, has low gloss and good resistance to attack by alkalis, acids, will not wash off.

BREVITY—Identify by IEN - 11806 If you write the maker

RELAY . . Sub-miniature design for aircraft use, 2 amps. at 28 volt dc.

Source: ALLIED CONTROL CO.
2 East End Ave., Dept. A, New York 21, N. Y.

Hermetically sealed

Nominal rating is 26½ volt dc. on the coil for operation at 18-volt dc. and release at 13-volt dc. Three sizes, all known as Type MH, are 2, 4 and 6-pole construction. The 2-pole unit measures ⅝ in. in diameter. The 6-pole assembly measures about 1¼ inches. Seated height in all three cases is 1½ inches. The relay will withstand aircraft vibration of 10G and shock of 30G on 10-millisecond duration. Each assembly is hermetically sealed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 11807 If you write the maker

ROTOR NUT SETTERS PAY FOR THEMSELVES IN 10 DAYS

Job: Assembly of sink tops. Were using hand ratchet type screw drivers to set ¼" square nuts—20 to a sink top.

Problem: To cut costs and improve product. To control tightness of nut-setting and avoid ripples in linoleum when back board and trim were pulled in place. Tools were tough on workers' hands.

Called in the Rotor Application Engineer.

Results: Changed over to Rotor Midget Nut Setters.

Output increased from 4 tops per hour to 16 tops per hour. 75% savings in assembly costs paid for the $90 tools in 80 working hours.

Extraordinary? Not at all . . . and we'd be glad to tackle your portable tool problems—grinding, screw driving, sand ramming, buffing, or what have you!

Yours for lower costs,
AIR O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 11808 If you write the maker

Get this New Guide

...TO FAST
...ECONOMICAL
MACHINING

44 PAGES
46 ILLUSTRATIONS
28 TABLES

"HAYNES STELLITE Metal-Cutting Tools" gives up-to-date information on chip formation, tool wear, and the machinability of metals. It also contains valuable information on how to increase tool service life and metal-removal rates by proper tool design and tool selection.

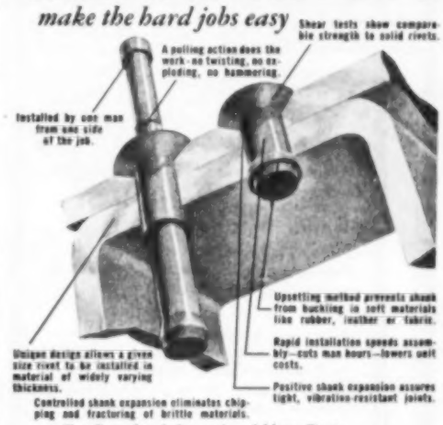
Every machinist, metallurgist, and tool designer should have a copy of this new manual and catalog. Write for a copy.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes Stellite" is a trade-mark of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 11809 If you write the maker

Here's why CHERRY RIVETS *make the hard jobs easy*



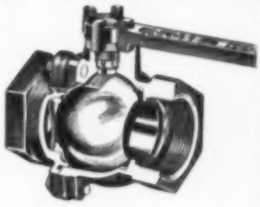
For Complete Information Address Dept.

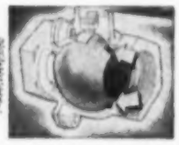
Cherry Rivet COMPANY — A Division of **Townsend** COMPANY

231 WINSTON STREET, LOS ANGELES 13, CALIFORNIA

BREVITY—Identify by IEN - 11810 If you write the maker

ROCKWOOD Ball VALVES





1. Leak proof service

2. Full round flow

3. Quick opening and closing — easy to install

These remarkable engineering features of the Rockwood Ball Valve will give efficient and economical operations thru years of everyday rugged use. They help increase production and profits by cutting maintenance cost.

Install Rockwood Valves in your plant today and your valve headaches will stop!

Recommended for 300 p.s.i., Rockwood Valves are available in all pipe sizes from ½" to 4".

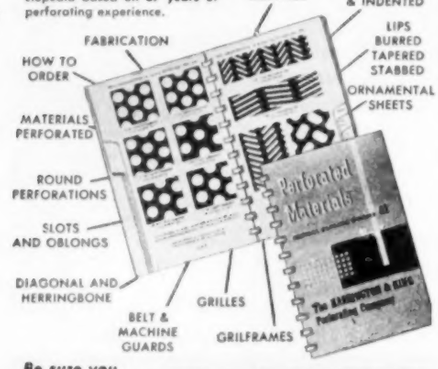
Distributors in all principal cities. *Write for illustrated folder V-4.*

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 11811 If you write the maker

What is Perforated Material?
Where to use Perforated Material
Why H & K Perforated Material?

A Perforated Materials Encyclopedia based on 67 years of perforating experience.



Be sure you have H & K General Catalog 62 —Write for it

The Harrington & King Perforating Co.
5637 FILLMORE ST., CHICAGO 44, ILLINOIS
114 LIBERTY STREET, NEW YORK 6, N. Y.

BREVITY—Identify by IEN - 11812 If you write the maker

VULCAN
ELECTRIC HEATING UNITS

On Airplanes

in high altitudes and sub-zero temperatures, Vulcan Electric Heating Units hold lubricants in a liquid state.

They're used also as anticipators in thermostatic control: in guided missiles and in speed indicators.

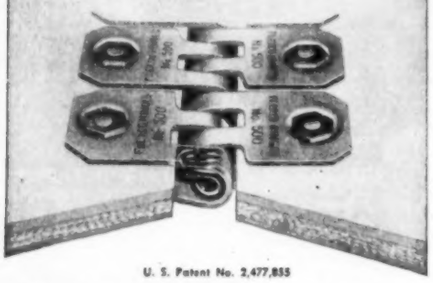
Vulcan electric heat is helping in many new inventions for both war and peace. To assist in the further development of your ideas, Vulcan heating designers will be glad to join their know-how to yours.

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Makers of Vulcan Electric Soldering Tools, Electric Solder Pots, Electric Glue Pots, Electric Branding Irons and Electric Heating Units.

BREVITY—Identify by IEN - 11813 If you write the maker

... the new separable
FLEXCO HINGED
BELT FASTENERS



U. S. Patent No. 2,477,855

- For joining grader, trencher, ditcher and other earth moving conveyor belts.
- For belts 3/8" to 1/2" thick.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.

Order From Your Supply House. Ask for Bulletin HF 500.

FLEXIBLE STEEL LACING CO
4610 Lexington Street • Chicago 44, Illinois

BREVITY—Identify by IEN - 11814 If you write the maker

CONVEYING . . Metal rod assembly to handle flat work for processing

Source: ESSEX CONVEYOR MFG. CO.
128-130 S. 14th St., Newark 7, N. J.

Available to specification

Illustrated is a new conveyor installed in a spray booth to process leather. The conveyor belt is made of 3/16-in. steel rods set on 1 3/8-in. centers in chains at the two sides. The chains ride sprockets in a closed circuit. The belt and the sprockets are mounted in a sectional structural frame for assembly on the job. Each conveyor is supplied to meet specified requirements. Self-cleaning action on the return run can be specified.

Width is to 6 ft. with 3/16 in. rods, wider when heavier rods are employed. Frame assembly is welded in individual sections that bolt together. A 25-ft. assembly, 6 ft. in width, powered by a 3/4-hp. drive, will list at about $2,500.

BREVITY—Identify by IEN - 11815 If you write the maker

DUST COLLECTING . . Lumite screen and wiper takes lint from air stream

Source: BAHNSON CO.
1003 S. Marshall St., Winston-Salem, N. C.

Timer controls operation

Type-S Air Cleaner is a new self-cleaning screen for installation over the air-intake opening in recirculating equipment where the air contains an excessive amount of lint. The screen is made of Lumite, 32 mesh, in a steel housing. A motor-driven wiper blade travels over the intake face to operate a neoprene blade in downward direction and to ride clear of the screen in reverse upward movement.

On the opposite face backing up the blade is a slide bar. At the bottom of the housing is a collector box into which the lint is deposited. During the reverse movement of the blade lint that gathers on the screen serves as a means to collect particles of dust in the air to provide dust-removing as well as a lint-removing action.

Three standard sizes rate 10,000 to 20,000 cfm. Overall dimensions range from about 5 1/2 by 1 by 1 1/2 ft. for the smallest unit to 6 1/4 by 1 1/2 by 7 ft. for the largest. Other special sizes can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Product names and functions are indexed, page 117

BREVITY—Identify by IEN - 11816 If you write the maker

Tube Swelling Can't Happen Here

Concord #20
STEAM HOSE

Patented CONCORD #20 Steam Hose is constructed with a special stainless steel inner wire braid that cannot swell.

This means you always have a full pressure flow because tube constriction can't occur.

Re-coupling is performed easily, quickly, with no complications.

Other construction features include — alternate high tensile steel wire and rubber layers firmly bonded over the outside of the tube for maximum burst protection. Asbestos braid provides positive cover adhesion and acts as cover insulator. Tough, abrasion-resistant cover withstands the most severe abuse.

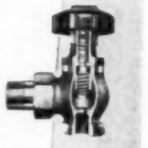
CONCORD #20 . . . flexible, tough, dependable . . . is the steam hose you'll want to have working for *you!*

Another Quality Product of
BOSTON WOVEN HOSE & RUBBER CO.
Distributors in all Principal Cities
PLANT: Cambridge, Mass.•P.O. Box 1071, Boston 3, Mass., U.S.A.

BREVITY—Identify by IEN - 11817 If you write the maker

ILLINOIS
STEAM SPECIALTIES

Replace Obsolete Steam-Wasting Units With Illinois Specialties



Equip your radiators with smooth-acting Illinois Supply Valves and sensitive, steam tight Illinois Thermo Traps.

Improve system operation by replacing thermostatic drip traps with Illinois Float and Thermostatic Traps wherever rapid elimination of condensate is essential.

Illinois Float and Thermostatic Traps are made in three Series to meet a wide variety of applications and for operating ranges from 50 pounds pressure to 25 inches vacuum.

Investigate! Compare! Try Illinois Traps on your worst service and be guided by results!

Write for Bulletins

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

BREVITY—Identify by IEN - 11818 If you write the maker

Spincraft
SKILL WILL DO IT

Production Methods Help You Gain Months of Time

Costs are *much lower*, too

Whenever emphasis is on speed in delivery, or lower costs, consider Spincraft metal fabricating. Of all the methods available for cold shaping flat or rolled sheet metals, the spinning lathe, plus special Spincraft forming skills, offers the fastest and least expensive means of getting production rolling. As an example, consider the parts and assembly for the water sterilizer unit illustrated here. From a scratch start Spincraft made the required tools, produced the components and assembly and began delivery ten days after receipt of the order. Months of time were gained, thousands of dollars saved.

Cases like this are everyday experiences at Spincraft —on both small and large runs. The answer you want cannot be guaranteed, but others have been helped so often and so well that Spincraft has become the world's largest metal spinning and fabricating plant. Call or write.

Components for stainless steel water sterilizer — spun, fabricated and assembled in record time at lowest cost.

The function, scope, mechanics and economics of Spincraft metal spinning and fabricating are discussed in this stimulating 40-page, well-illustrated booklet. A copy is yours for the asking.

Spincraft
SKILL WILL DO IT
INCORPORATED

4153 W. STATE ST.
MILWAUKEE 8, WIS.

Heretofore known as Milwaukee Metal Spinning Co.

BREVITY—Identify by IEN - 11820 If you write the maker

MERCOID

AUTOMATIC CONTROLS FOR INDUSTRIAL APPLICATIONS REQUIRING POSITIVE CONTROL OF PRESSURE, TEMPERATURE, LIQUID LEVEL ETC.

NOTE THE FEATURES

MERCURY SWITCH

Hermetically sealed mercury switch is used. They cannot be affected by dust, dirt or corrosion; nor are they subject to open arcing, oxidation, pitting or sticking of contacts, all common causes of contact trouble. This switch will give better control service and longer control life.

BOURDON TUBE
(Hidden back of cover)

The Bourdon tube is the actuating element of the control. It is the oldest known, tried and proven element, having been used in gauges for many years.

OUTSIDE ADJUSTMENT

The outside double adjustment with the calibrated dial and pointers is a convenient feature, making it very easy to set the required operating range, plainly visible on the dial. All guesswork is eliminated.

GLASS FACE

The glass face on the cover permits seeing the entire operation of the control in plain view. One can always tell whether the switch circuit is open or closed, a great convenience whenever servicing becomes necessary.

WRITE FOR CATALOG TODAY—PLEASE MENTION THIS PUBLICATION

THE MERCOID CORPORATION
4201 BELMONT AVE. CHICAGO 41, ILL.

BREVITY—Identify by IEN - 11821 If you write the maker

SPEED UP
SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.
9905 PACIFIC AVENUE FRANKLIN PARK, ILLINOIS

BREVITY—Identify by IEN - 11822 If you write the maker

WILSON'S CLOCK-TYPE and FLAT SPRINGS

For years our entire production of clock-type springs has been used in products of our own manufacture. Now — by increased facilities — we have capacity to produce springs for other users requiring critical dimensions. We endeavor to use the finest quality steel in our springs. Exceptionally close tolerances and rigid specifications are made practical by our ELECTRONIC METHOD OF ANNEALING. We can supply springs either flat, formed, coiled or perforated.

Whether you make instruments, gauges, timers or any other spring using device, it will pay you to submit drawings and specifications to Wilson's for a quotation.

We are also skilled in the making of small stampings, the assembly of small parts, wiring assemblies, and the annealing, tempering and hardening of small parts by induction heating.

WILSON'S OF CLEVELAND
425 Lakeside Ave., N. W.
CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 11823 If you write the maker

PACKAGING . . Counting machine feeds small parts into containers

Source: U. S. ENGINEERING CO.
40-26 22nd St., Long Island City 1, N. Y.

Quick as half a wink

Any total to a maximum of 1,000 can be set on the Potter predetermining electronic counter which controls the operation of this new Model E in the company's line of Count-O-Matic packaging equipment, previously described IEN-3597-51. The machine will operate automatically at feed rates to 3,500 parts per minute. It will provide count accuracy of 100 per cent in normal use.

Bolts, nuts, rivets, balls, studs, discs, nails, paper fasteners, small die-cast and screw-machine parts are representative products that can be handled. Non-metallic products and those that are highly fragile can be fed also into containers at high speed and accurate count without danger of breaking them up.

Items to be handled into containers are filled into a hopper that meters them to a bucket elevator. The elevator delivers through a chute at its top to a Syntron vibrating feeder. The feeder delivers to a pair of inclined parallel rolls driven by a small motor with variable-speed control. The rolls are adjustable for center gap. They will discharge parts that are improperly delivered, will drop out dirt and will align the main flow into a single-file continuous stream that delivers to the electronically controlled gate above parallel delivery spouts.

The gate switches from one side to the other to cut off delivery through one spout and immediately start it through the other spout each time the predetermined total is reached. An electronically synchronized conveyor can be added to position empty containers and remove filled ones.

BREVITY—Identify by IEN - 11824 If you write the maker

THERMOMETER . . Bimetal design reads temperature to 1,600 deg. F.

Source: W. C. DILLON & CO.
1419-23 S. Circle Ave., Forest Park, Ill.

Stops worker guessing

New design of the company's Temperometer employs a stainless-steel tube, closed at one end and measuring a little over ¼ in. in diameter, to enclose the bimetal actuating element. The tube is immersed in a fluid such as impregnating wax, molten solder, to provide a reading on the dial.

Graduations and figures are anodized to prevent fading. A formed wire handle is supplied to suspend the unit over the lip of a kettle or ladle. The stem can be equipped with a ¼-in. pipe thread for permanent or semi-permanent location.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11825 If you write the maker

NEW, LOW-COST WHITEPRINTER • THE COPYFLEX "20"

Why wait for prints? With the low-cost Copyflex "20" you can quickly make your own prints, *when* you want them — for only 2¢ (average) per sq. ft.! And that includes all costs . . . material, labor, depreciation, etc.

The Model 20 is a completely new, medium volume machine that sells for the *lowest price* of any machine in its class. It handles cut sheets or roll stock up to 42" wide, and delivers completely developed, ready-to-use prints.

It uses no vapor developer, therefore does not emit unpleasant fumes. Simply connect it to a 60 cycle, 115 volt AC power circuit. No trained operator is needed — anyone can operate a Copyflex.

Send today for further information.

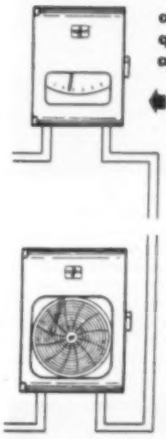
BRUNING

CHARLES BRUNING COMPANY, INC. • DEPT. B-111, • 100 READE ST., • N.Y. 13, N.Y.

BREVITY—Identify by IEN - 11826 If you write the maker

How to Shorten Distances in a Plant

and improve production and quality by remote measurement and control



MEASURE HERE

Bristol Metameter* telemetering transmitter at a remote location measures pressure, flow, level, temperature, voltage, current or power.

TRANSMIT ANY DISTANCE

— a few feet or many miles — by telephone circuits, private wires, carrier-current channels, radio (including microwave).

RECORD HERE

Bristol Metameter telemetering receiver at central point, records or indicates measurement made by the transmitter.

BRISTOL

Write us for Bulletin M1700. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

*Reg. U. S. Pat. Off.

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 11827 If you write the maker

- PERFECT CIRCLE
- HEAVY STEEL

CLANCY
SURE-GRIP
HOSE CLAMPS
Can be Reused

Clancy steel clamps won't rust on . . . are easy to remove.

Merely loosen nut and bolt and remove.

Replace and tighten. Perfect circle assures uniform fit.

. . . can be removed and replaced time after time without injury to the hose, clamp, nut or bolt.

Clancy Sure-Grip Clamps keep their shape, hold any pressure the hose will stand. All parts separately galvanized — no rough edges, won't rust or stretch. For air, gas, water or steam. Every size to fit any hose — foreign or domestic. Write for prices.

J. R. CLANCY INC.
1008 W. Belden Ave.
SYRACUSE 4, N. Y.

BREVITY—Identify by IEN - 11828 If you write the maker

Control Costs with
COUNTING SCALES

Toledo's *complete line* of Counting Scales gives you the right model for *accurate cost control* in a wide range of jobs! For issuing pre-determined quantities of uniform parts . . . counting unknown quantities . . . for *faster inventory counts* . . . or to get accurate receiving, shipping, production, cost and piece-work counts. Complete selection of models . . . for parts weighing only a few grains . . . up to total counting capacities of several tons. Also choice of double and triple ratio combinations. Send for booklet 2204. Toledo Scale Company, Toledo 12, Ohio.

TOLEDO
HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 11829 if you write the maker

runs nuts in 40% of time required by hand wrenches

With a CP-3440 REVERSIBLE AIR IMPACT WRENCH this operator is saving about 60% of time consumed when a T hand wrench was used — and the packing nuts on the condenser are all run to *uniform tightness* — with operator fatigue eliminated. Its controllable power, to assure uniform tightness, is invaluable on production line work. Less than six inches long, the CP-3440 works where longer tools cannot be used. Write for Bulletin 812.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 11830 if you write the maker

Worth a Second Look

Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS

100 YEARS ENGINEERING LEADERSHIP — 1851-1951

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

BREVITY—Identify by IEN - 11831 if you write the maker

INCREASE PRODUCTION OUTPUT WITH THESE DAVIS standard boring and planing tools

Standard and job engineered Davis cutting tools easily fit a wide range of machining operations. Typical examples of tools and tool holders indicate the advanced design and versatility of the Davis line. You can depend upon Davis for all types of boring and planing tools as well as machine setup accessories. Before tooling new machines or retooling present machines, ask experienced Davis engineers for time-saving recommendations.

1 New Davis 8-Position Tool Holder . . . This new Davis tool holder is highly adapted for boring, facing, turning and chamfering and is recommended for all types of vertical boring and turning mills.

Eight positions in this tool holder are spaced 45° apart. It is indexed on precision locating plugs and bushings. Tool block accommodates tools up to 1½" square—rigidly supported by cast steel body.

2 Davis "Clamped-On" Cutters for Planers . . . Metal is hogged off in ribbons 1/16" thick and 2" wide in a single pass of the planer with Davis heavy-duty cutters.

Sturdy Davis "Clamped-On" type H.S.S. or carbide cutters and massive holders make it practical to use maximum planer feeds.

3 Davis "Super" Micrometer Stub Boring Tool Sets . . . Each set consists of precision made stub boring bars that are accurate to .0001" fine adjustment . . . for range from ½" to 7" in diameter.

Stub boring bar sets speed boring operations on vertical and horizontal boring machine.

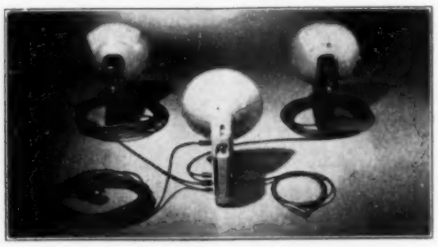
DAVIS BORING TOOL DIVISION
GIDDINGS & LEWIS MACHINE TOOL CO.
FOND DU LAC, WISCONSIN

DAVIS

BREVITY—Identify by IEN - 11832 if you write the maker

LIGHTING . . Lamp holder and connection for flash photography

Source: EASTMAN KODAK CO.
341-45 State St., Rochester 4, N. Y.



Lamp tabulation on reflector back

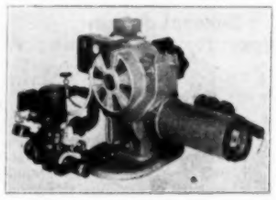
Ektalux trade names new flash-lamp holder and reflector to take standard photoflash lamps. It provides connections for additional lamps, a remote control cord and pushbutton with a shorter cord for current input from a suitable battery condenser power unit. In addition to the main holder the line includes extension holders that plug in between each other and the main unit to a maximum of seven in one circuit. The holder is equipped with a hand grip and is secure enough to support heavy press cameras. The units can be nested for storage and carrying.

The standard holder with a bracket and 15-in. bayonet connector cord lists at $34.75. With a bracket for a Polaroid Land camera and connector cord the list is $35.75. With a press-camera bracket and a 3-ft. 2-post connector cord the list is $39.50. An extension unit with a 20-ft. bayonet connector cord adds $14.50.

BREVITY—Identify by IEN - 11833 if you write the maker

HEATING . . Combination burner for gas and oil, 16 to 190 bhp.

Source: CLEAVER-BROOKS CO.
324-28 E. Keefe Ave., Milwaukee 12, Wis.



Changeover instructions supplied

Type AMG designates new burner in which three sizes can be converted in the field to burn either gas or oil with two sizes connected for both fuels to require only minor changes for one or the other. The smallest of the five will handle 1 to 5 gph. of fuel oil and rates 720,000 btu. when burning gas. The largest will handle 6 to 60 gph. of fuel oil and rates 8,700,000 btu. on gas. The driving motor rates ½ to 5 hp. In each case the motor-driven blower supplies all of the air that is required for combustion.

The gas valve opens slowly on the three smaller units in the line for operation without modulation. The two larger units operate with modulation between high and low fire. Electronic controls are employed for approved operation protection to meet Factory Mutual requirements in the three smaller sizes. Two larger are Factory Mutual approved.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11834 if you write the maker

THE EASY WAY TO TELL!

Changeable Letter Bulletin Board
The message you want—when you want it!

DAV-SON INDUSTRIAL BULLETIN BOARDS

Employee bulletins, safety messages, production records all get maximum attention when you use DAV-SON Bulletin Boards. There is a DAV-SON Bulletin Board for every purpose.

- Changeable Letter Boards
- Cork Back Pin-Up Boards
- Indoor and Outdoor Types
- Metal or Hardwood Frames
- With or Without Locking Glass Doors
- Illuminated and Non-Illuminated
- Special Safety Displays
- Single and Multiple Panels

Cork Back Boards. For letters, photos, posters, etc.

Write for complete information regarding your requirements.

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1923
311 N. DESPLAINES ST., CHICAGO 6, ILL.
MANUFACTURERS OF BULLETIN BOARDS FOR EVERY NEED

BREVITY—Identify by IEN - 11835 if you write the maker

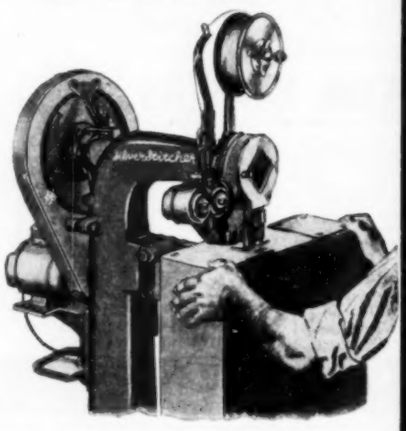
L-S "JACKSTACKER" TIERING TRUCK

The ONE and ONLY

LEWIS-SHEPARD
LEWIS-SHEPARD PRODUCTS INC. 162 WALNUT ST., WATERTOWN 72, MASS.
MIDWEST PLANT: Crawfordsville, Ind. Sales and Service in Principal Cities

BREVITY—Identify by IEN - 11836 if you write the maker

How to save time, cut costs on carton closure



"TIME IS MONEY"
— Ben Franklin, 1748

When your packing department people pack more cartons per hour, your output goes up and your costs go down. That's why so many manufacturers today stitch their cartons with Acme Silverstitchers.

For example, B&T Metals Co., Columbus, Ohio, cut material costs 87% and cut time per carton 30% by installing Acme Silverstitchers to help package pieces of extruded aluminum.

Connors Brothers, Ltd., Black's Harbour, New Brunswick, cut material costs 43% and labor costs 50% by packing canned sardines in fibreboard cartons bottom stitched by an Acme Silverstitcher.

A packer of medical kits cut closure costs 81%. A maker of fluorescent lamp bulbs saved $15,000 in one year. An asphalt producer doubled his output with fewer men.

There's a complete line of Acme Silverstitchers, and there's almost sure to be one to save time and cut costs for you. Ask your Acme Steel representative for details, or write Dept. IEN-111.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8
Steel Strapping — Steel Hoops
—Venetian Blind Slat Stock—
Box Straps—Corrugated Fasteners—Strip Steel

ACME STEEL

BREVITY—Identify by IEN - 11838 if you write the maker

TO HANDLE YOUR EXPANDED CIVILIAN AND WAR NEEDS

FOR SCREENS, STRAINERS, FILTERS

Production space has been increased by 100% and new modern equipment added giving new high standards in performance. Included in new equipment are special production machines that are particularly suited to do crimping and brazing required in strainers used in defense work. Storage space has been enlarged permitting handling of WIDER RANGES of monel and brass wire cloth and perforated metal. Send us your specifications for a speedy quote. Write for FREE Literature.

PITTSFIELD PRODUCTS, Inc.
ANN ARBOR, MICHIGAN

BREVITY—Identify by IEN - 11839 if you write the maker

Why put up with
fast wearing blast cleaning nozzles?

This SUPER-HARD BORIUM INSERT protects the *entire* nozzle from wear

When blast cleaning nozzles are equipped with tungsten carbide "BORIUM" liners, you save many ways:

- Rapid cut-outs are eliminated.
- Wear resistant liners retain orifice size longer.
- High air velocity is maintained.
- Pattern is tightly concentrated.

. . . Result? less down time, fewer nozzle changes. MORE and faster work accomplished.

300 minimum hour guarantee when cleaning with sand or most other common abrasives. Special BORIUM inserts made to order for your nozzle design. Standard screw and flange BORIUM NOZZLES carried in stock.

STOODY COMPANY
11930 E. Slauson Ave., Whittier, Calif.

BREVITY—Identify by IEN - 11840 if you write the maker

OVER 2% OF THE STEEL PRODUCED IS USED TO FASTEN THE REST TOGETHER . . .

Steel is a basic commodity. Upon our ability to produce steel, and more steel, rests the success of our rearmament program and the very security of our country. Scrap is an important ingredient of new steel. More and more scrap will be required as production expands. But what about the end products of steel—the machinery, the weapons, the vehicles, the thousands of products fabricated from steel? That's where fasteners are a MUST. Without fasteners most of the steel produced would be of little use. So when you think of steel as an important commodity, think of fasteners, too. *Both* are vital to our industrial economy and to the success of our defense effort!

The home of "quality controlled" fasteners — Lamson & Sessions

The LAMSON & SESSIONS Co. . General Offices: 1971 West 85th Street • Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

BREVITY—Identify by IEN - 11841 if you write the maker

PRINTING . . Belt feed machine prints and dry develops, width to 16 in.

Source: OZALID DIVISION
1641 Ansco Road, Johnson City, N. Y.

For office and plant

Ozamatic trade names new table-mounting assembly of the company's dry developing equipment, previously described IEN-11408-50. Reproduction can be made in a variety of colors, depending on the sensitized paper cloth or foil chosen, from originals that have been typed, printed, written or photographed on translucent sheets. Operating speed is to 30 fpm. by a dc. motor operating through a variable-speed electronic control from a 110-volt 60-cycle ac. line.

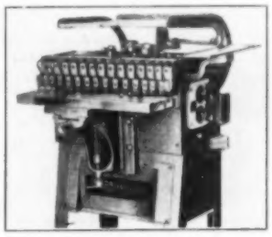
The operator matches originals and sensitized material on the table at the front and starts them between the feed belt. The originals are returned to a tray just above the table. The exposed prints are passed through the developing operation and are delivered at a tray at the top of the machine. Operating controls are located at the front. Dimensions are 28½ by 35½ by 27 inches. Weight is 355 pounds.

Bulletin, "The New Ozamatic by Ozalid", 6 pages, presents an illustrated detailed description covering construction, operation and application. Includes line drawings showing the operating assemblies, identifying them by number and explaining their function.

BREVITY—Identify by IEN - 11842 if you write the maker

MARKING . . Etching machine with 15 electric heads above work table

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.



Made in England

Minute arcs formed by alternately making and breaking electric contact between the work and vibrating electrodes result in fine continuous line markings on work positioned under the electrodes in this new machine. The electrode heads are connected to a pantograph linkage extending to a tracer which the operator moves over a master pattern on a table surface secured to the right-hand side of the machine. Various types of holding fixtures can be supplied for work such as valve stems, ball races, taps, center drills, cutlery, piston rings, labels, razor blades.

Each head carries an electric vibrator for operation on 50 or 60-cycle ac. input. Electrodes are available in four diameters between 0.005 and 0.014 inch. The etching action can be varied to suit the hardness of the work metal at a transformer with six output positions connecting to control switches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11843 if you write the maker

SAVE Maintenance AND Towel Costs WITH

Sani-Dri ELECTRIC Hand or Hair Dryers

Save valuable maintenance time and eliminate continuing towel expense. New, improved features make Sani-Dri faster drying . . . provide quick, automatic hand or hair drying service 24 hours a day year after year! Sani-Dri is a permanent solution to washroom sanitation and drying problems—and SAVES UP to 85% of WASHROOM COSTS!

All Sani-Dri Electric Dryers are GUARANTEED, and have carried the Underwriter's Seal of Approval for over 18 years!

SEND FOR NEW BROCHURE showing all models and installation pictures.

Distributors in Principal Cities
THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
34111 Commonwealth Ave. • North Chicago, Ill.

BREVITY—Identify by IEN - 11844 if you write the maker

UNIVERSAL DRILL BUSHINGS establish new standards of high quality

Universal Drill Bushings, produced at the big, modern plant of the Universal Engineering Company, have been first in industry for more than 25 years. They are accurately machined with superhoned bores from the finest quality steel and carefully inspected to insure maximum efficiency and extremely long life. Write today for complete information.

The modern home of finer production tools
UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

156-A

BREVITY—Identify by IEN - 11845 if you write the maker

THIS PROCESS LOWERS PRODUCT COSTS

SEVEN MINUTES SAVED. Connecting rod at left was cast by the shell molding process. Note smooth surface, minimum excess metal. Rod at right, cast in conventional sand mold, is rougher; takes 7 minutes longer to finish.

Design Your Products or Parts with the Shell Mold Process in Mind!

The shell molding process produces thin-shell sand molds and cores bonded with BAKELITE Phenolic Resins. It permits casting ferrous or non-ferrous metals to such accurate sizes and shapes that you will find it an economical and practical improvement on your present laborious and costly machining operations.

Here are some of the advantages Builders Iron Foundry of Providence, R. I., gained for one of its customers, by using this process for casting the "Meehanite" metal connecting rods illustrated:

• *Surfaces that are virtually pattern-smooth* • *Tolerances of .002 to .005 of an inch per inch* • *30 per cent reduction in finishing time as compared with green sand castings* • *All holes cast; boring eliminated.*

Investigate this remarkable process. Your foundry should know about it. You will find that designing your products with this process in mind can speed production, lower costs, conserve metal, even eliminate serious production bottlenecks. For further facts, write Dept. CX-14.

BAKELITE
TRADE MARK
PHENOLIC BONDING RESINS

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 11847 If you write the maker

IDEAL METAL CUTTING SAW FOR YOUR SHOP!

Kalamazoo BAND SAW

A veritable workhorse in any shop. Cuts bars, angles, tubes, pipe, and rounds with no burr, minimum kerf. Works fast, smooth and accurately. Uses standard 1/3 HP 110/60/1 motor. Completely portable. Write for details on this low cost metal cutting saw.

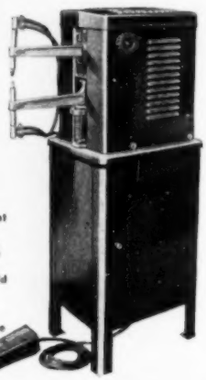
Model 618-S. Capacity 6" round, 6" x 10" flat. Coolant equipment available.

MACHINE TOOL DIV. Kalamazoo TANK and SILO CO.
937 HARRISON STREET KALAMAZOO, MICH.

BREVITY—Identify by IEN - 11848 If you write the maker

GET UP TO 6000 3-Cycle WELDS PER HOUR with Delta 5-KVA

AUTOMATIC Spot Welder



An ideal machine for sheet-metal contractors, garages, repair shops, and many kinds of light metal fabricators.

- Fully automatic
- Moving primary coil provides infinite variation of welding current
- One-piece solid secondary coil constitutes the welding horns—no loss of power caused by inefficient connections
- Capacity range from 14-gauge mild steel to paper-thin .002" steel shim stock
- Automatic production, quality control and repeat non-beat feature—no product spoilage
- Weld timing precision-controlled—Dwell or Off-Time fully adjustable

There's a Delta Power Tool for Your Job - Wood or Metal Working

53 MACHINES—246 MODELS—MORE THAN 1300 ACCESSORIES
For Delta dealers see your Classified Phone Directory under "Tools"

DELTA MILWAUKEE — DELTA POWER TOOL DIVISION
Rockwell MANUFACTURING COMPANY
615M E. VIENNA AVENUE, MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 11849 If you write the maker

Engineering Data

Complete, concise, practical . . . dealing with the application of SYNCHRON timing motors, time machines, gear trains, and D.C. motors for special timing jobs.

To Help You

solve your timing problems, adapting standard timing machines or designing new.

Design for Defense

Hansen D.C. Motors powered Servo units in last World War. Improved products, and enlarged design and manufacturing facilities for precision production are available for defense contracts.

Pulls up to 8 oz. direct load at 1 R.P.M. Operates efficiently at -40° to +140°F. Available with gear trains to convert any speed.

SYNCHRON timing motors

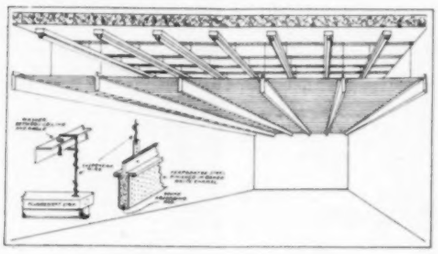
HANSEN MANUFACTURING CO., INC., PRINCETON 2, IND.
Send catalog and engineering data to:

Name
Firm
Address
City Zone State

BREVITY—Identify by IEN - 11850 If you write the maker

LIGHTING . . Luminous ceiling is free from glare and absorbs sound

Source: L. J. SEGIL CO.
2502 W. North Ave., Chicago 47, Ill.



Lighting fixtures are hidden

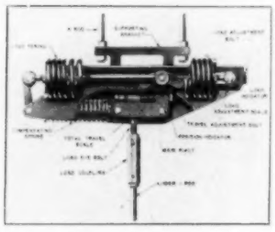
Acusti-Luminus trade names new fluorescent lighting equipment to produce even glare-free illumination in a room and at the same time to absorb sound. The equipment consists of fluorescent fixtures suspended from the ceiling above a corrugated translucent plastic sheet that rests upon acoustical beams or fins measuring 1 in. in width by 6 in. in depth. The fins are made of steel with white enamel finish and are perforated. They contain acoustical pad and run the length or width of the room. They are spaced on 36-in. centers.

The thin plastic sheets can be rolled up and removed for washing in a special machine. The assembly covers unsightly ducts, piping and overhead obstructions. It does not require additional sprinkler installations. The plastic will not support a flame. It weighs a little under 1 oz. per square foot.

BREVITY—Identify by IEN - 11851 If you write the maker

PIPE FITTING . . Spring type hanger, constant lift on changing temperature

Source: GRINNELL CO.
277 West Exchange St., Providence 1, R. I.



It is done with springs

Model L is new design of the company's spring-type pipe hanger, previously described IEN-5460-37. The new assembly is available in three physical structures for maximum vertical travel of 2½, 5 and 10 inches. There are 16 spring sizes that apply interchangeably to cover load ranges between 141 and 19,530 pounds. Field load adjustment is made by turning a bolt following initial calculation of the support required.

The hanger provides constant support under changing temperature conditions that result in expansion or contraction in a pipe line. It applies in lines where change of the support effort might seriously affect the designed factor of safety.

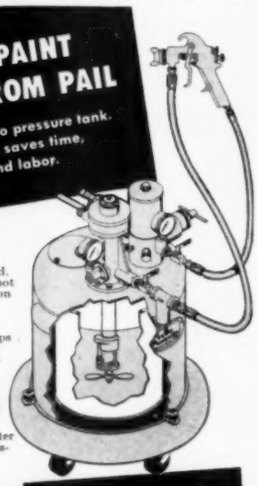
Data Book L-1951, 8 pages, presents illustrated description with line drawings and tables of dimensions including load in pounds or travel in inches of each of 16 spring assemblies.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11852 If you write the maker

PUMP PAINT DIRECT FROM PAIL

No transferring to pressure tank. Paintmaster saves time, paint and labor.



Saves mixing time
Paintmaster's built-in agitator keeps paint mixed. Uses rotary gear pump, not air pressure . . no aeration of paint.

Saves on down time
Graco's Paintmaster pumps paint right out of original container. No transfers to pressure pots. No shut-downs for refilling. Less clean-up time.

Saves up to 25% paint!
Big paint savings are possible with a Paintmaster because low operating pressure reduces overspray.

Write for free literature. 5-gal. and 55-gal. models available.

GRACO Paintmaster

GRAY COMPANY, INC.
111 GRACO SQUARE
Minneapolis, Minn.

OFFICES: NEW YORK • PHILADELPHIA • DETROIT • CHICAGO • SAN FRANCISCO
ATLANTA (opening January 1)

BREVITY—Identify by IEN - 11853 If you write the maker

Kester Solder

Kester Flux-Core Solders are made only from the finest grades of tin and lead. Fluxes are chemically and scientifically correct.

Eliminates Rejects

Rejects are eliminated when the correct solder for the job is used. Kester makes over 100,000 different types and sizes of Flux-Core Solder.

Faster

Using Kester "Speed" Solders will increase the output of your assembly lines.

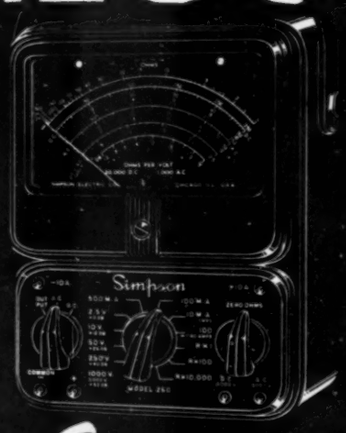
KESTER SOLDER COMPANY
4201 Wrightwood Avenue
Chicago 39, Ill.
Newark, N. J. Brantford, Can.

KESTER SOLDER

SEND FOR FREE MANUAL: "SOLDER AND SOLDERING TECHNIQUE"

BREVITY—Identify by IEN - 11854 If you write the maker

260 260



Simpson

volt-ohm-milliammeter that outsells all others combined.

260

BREVITY—Identify by IEN - 11856 If you write the maker

New-REMINGTON STUD DRIVER

MODEL 450

Cartridge-powered tool fastens steel or wood to concrete or steel in seconds!

Sets studs as fast as 5 min.—up to 100 times faster than usual methods for hanging steel sash to concrete, setting steel or wood structurals on concrete, attaching conduit and boxes to masonry and steel surfaces, etc.

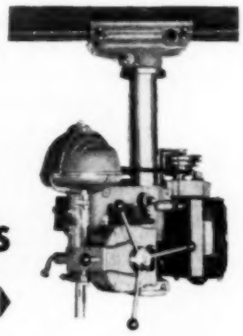
Just 12 seconds to load and fire! Safety shield, cocking indicator, safety button make it *extra*-safe. Sets wide variety of studs—5 selective power loads.

No wires or outside power source. Weighs 5½ lbs. Rugged, dependable, stands hard handling and use. Costs only $119.50. Write today for more details, name of nearest distributor. Remington Arms Company, Inc., Industrial Tool Division, 931 Barnum Avenue, Bridgeport 2, Connecticut.

Remington DU PONT

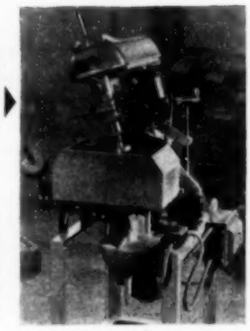
BREVITY—Identify by IEN - 11857 If you write the maker

Reduce setup and machining time with WALKER-TURNER Drill Heads



Overhead Drill Assembly — 20" Walker-Turner Drill Head is mounted on a sliding carriage. Ball bearings provide easy lateral movement. Head may be swung in a complete circle.

Designed to operate in any position



Two Drill Heads Working at Once—to rough grind lens blanks to specified curvature. Not only is machining time reduced, but duplicate operation insures required accuracy.

Multiple Mounting — "In-line" arrangement of 20" Drill Heads can speed output on many jobs where a series of holes are to be drilled, tapped, reamed or counter-bored in a single piece.

Your Walker-Turner Distributor will be glad to demonstrate the flexibility of these production tools. Let him show you how Walker-Turner 14" and 20" Drills are designed to increase production—*in more ways than one!*

SOLD ONLY THROUGH AUTHORIZED DEALERS

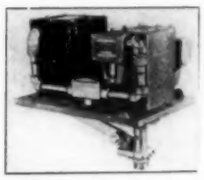
WALKER-TURNER walker-turner KEARNEY AND TRECKER CORPORATION PLAINFIELD, N. J.

DRILL PRESSES • RADIAL DRILLS • TILTING ARBOR SAWS
BELT and DISC SURFACERS • METAL-CUTTING BAND SAWS
METAL-SPINNING LATHES • SPINDLE SHAPERS • JOINTERS

BREVITY—Identify by IEN - 11859 If you write the maker

TESTING . . Viscosity meter for operation under pressure or vacuum

Source: NORCROSS CORP.
245-49 Newtonville Ave., Newton 58, Mass.



The measuring element

New assemblies of measuring elements in the company's viscosity meter, previously described IEN-2190-51, are now available to read viscosities of solutions under pressures from vacuum to 100 pounds. The new units are known as Models M5 and M6. They are used in place of the standard Model M3 which is for solutions at atmospheric pressure. Both elements are suited for application with recording and controlling equipment that the company also is prepared to supply.

Sampling tube, forming part of the assembly, is immersed in the liquid and a motor-driven cam at the top of the tube alternately raises a plunger and releases it to drop by gravity. Time required for the plunger to drop through the liquid that has been drawn into the tube is a measure of the liquid viscosity. This time interval is transmitted electrically to the recorder, is translated to pen movement on the chart.

BREVITY—Identify by IEN - 11860 If you write the maker

WELDING . . Arc electrode to salvage and to repair iron castings

Source: EUTECTIC WELDING ALLOYS CORP.
40-42 172nd St., Flushing 58, N. Y.

Can be machined when annealed

EuterTrode 26 is a new arc-weld electrode for all-position application on ac. or dc. to salvage defective iron castings and to repair those that have broken in service. The electrode is supplied in ⅛-in. diameter and is recommended for use on 60 to 120-amp. welding current. It produces a weld with tensile strength to 65,000 lb. per square inch. Brinell hardness in annealed condition is 150 to 200.

BREVITY—Identify by IEN - 11861 If you write the maker

FILTERING . . Cartridge design for use on oil, pressure to 1,500 pounds

Source: HILLIARD CORP.
98 W. 4th St., Elmira, N. Y.

Replaceable cartridge

Type HFC-2-HP is a new cartridge-type filter for use on lubricating and sealing oils such as those employed on centrifugal gas compressors and oil pumps in pipe lines. Oil enters the inlet and is forced through the filter cartridge which employs fuller's earth or cellulose. The clean oil returns to the oil seal or supply tank as required. The smallest unit in the line rates 1 gpm. and measures 10 by 10 by 28 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 11862 If you write the maker

Long experience, coupled with most modern equipment, combined with quality materials go into each Ohio Gear and Ohio Speed Reducer. Every detail of product and workmanship is designed to insure accuracy, durability and smooth operation.

Illustrated above are a few applications by large manufacturers who depend on Ohio Gear.

1. Ohio Gear DPL Speed Reducer operating a paint booth turn-table in a large metal working plant.
2. Ohio DS Speed Reducer, 300 to 1 ratio, used in the drive of a machine which automatically welds both heads into the shell of a 55 gallon barrel.
3. Ohio Gear DNU Speed Reducer operating an overhead scrap conveyor belt in a large die casting plant.
4. A PL3 Reducer, 40 to 1 ratio, operating the turn-table of a machine automatically welding automobile crankshaft vibration dampers.
5. Series of Ohio Gear HS Speed Reducers operating conveyors in a California fruit packing plant.
6. Detroit MotoGrate Industrial shaker using an Ohio DHUD Speed Reducer as part of auxiliary equipment.

Consult your nearest distributor or write us for complete information.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
3545 EAST 179th STREET • CLEVELAND 18, OHIO

OHIO GEARS

BREVITY—Identify by IEN - 11863 If you write the maker

SAVE MANPOWER BY USING AUTOMATIC CIRCUIT CONTROL

EFFICIENT USE OF MANPOWER is more important today than ever before. Utilize this valuable manpower to the fullest by doing away with unnecessary *manual operation* where automatic time control can do the job.

GENERAL ELECTRIC time switches furnish automatic time control for almost any job—process timing, pump and blower control, oven or conveyer control, plant lighting, floodlighting.

YOU'LL SAVE TIME and avoid the trouble of switching equipment on and off manually . . . you'll save in power costs that mount up when power is left on overtime.

General Electric offers you a complete line of time switches designed to fit *your* timing needs. See your G-E representative for more information. General Electric, Schenectady 5, N.Y.

T-47 TIME SWITCH: inexpensive, efficient control; for one ON-OFF operation in 24 hrs.

T-27 TIME SWITCH: handles almost any timing problem; rugged, versatile, convenient.

GENERAL ELECTRIC

605-122

BREVITY—Identify by IEN - 11864 If you write the maker

Mueller Climatrol

space-saving gas-fired unit heaters
(propeller fan or blower types)

Proof of SUPERIORITY is here

1. **One-piece all-welded steel heat exchanger** — no tie-rod, bolted, gasketed, or slip joints to leak, separate or crack.
2. **Uniform air flow and heat distribution** — burner extends under entire heat exchanger; insures maximum fuel economy.
3. **High Crown Sheet** — no flame impingement, no hot spots.

Write for full details —

MUELLER gives you a unit to fit every application — 4 sizes: 60,000, 90,000, 120,000 and 150,000 Btu input capacities. A.G.A. and Underwriters' Laboratories approved — with design features that assure longer life, greater economy. These units are *shipped assembled and pre-wired* for quick, low-cost installation. E-44

L. J. Mueller Furnace Co.
2040 M W. Oklahoma Ave.
MILWAUKEE 15, WISCONSIN

BREVITY—Identify by IEN - 11865 If you write the maker

You Need It

IN YOUR PLANT

TO LIFT AND LUG HEAVY LOADS FASTER, EASIER... *It's Hydraulic!*

What a Truck! Check These Points:

- Simple Hydraulic Lifting and Lowering Mechanism.
- Steel Deck Allowing Use Without Skids.
- 10 Front Wheels for Easy Pulling.
- 5 All Bearing Turntable for Easy Steering.
- Accurate Control of Lowering Speed.
- Easy to Operate in Crowded Areas.
- Every Stroke a Power Stroke. No Bending.
- 30lbs. Effort Lifts Heaviest Loads.
- All Welded Construction.

SERVICE HYDRAULIC *Lever Lift* TRUCK

Sure it's needed—whenever there are loads up to 3 tons to move. Just back the Service LEVERLIFT under a skid. A few easy strokes lift the load. And easy-rolling wheels let you "take it away" with little effort. Available in capacities of 2500 lbs., 3500 lbs., 5000 lbs., and 6000 lbs. 26 different Platform sizes in each capacity. Steel, rubber or plastic wheels. *Write for descriptive Circular Today.*

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan and Somerville 43, Mass.
Representatives in all Principal Cities

BREVITY—Identify by IEN - 11866 if you write the maker

CHALLENGE SURFACE PLATE EQUIPMENT

PRECISIONED FOR YOUR PRECISION NEEDS!

ANGLE PLATES Provide a practical and versatile method for clamping and holding work. Challenge plates are made of high grade, fine-grained semi-steel—special heat treated and precision ground to an accuracy of .0005-inch. Made in 22 sizes, from 2½x6x12 inches up to and including 18x18x18 inches.

BOX PARALLELS. Special heat treated and precision ground to an accuracy of .0005-inch.

V-BLOCKS: Recommended for supporting shafts and other cylindrical work when drilling, checking, inspecting, etc. Made of fine-grained semi-steel castings. Special heat treated, precision ground. Ribbed sides.

RIGHT ANGLE IRONS: Made of fine grain special analysis semi-steel, specially treated. End and sides are precision ground both square and parallel.

STRAIGHT EDGES: Scientifically shaped and ribbed to retain accuracy. Made of special analysis semi-steel.

Write for complete information and prices. 684

THE CHALLENGE MACHINERY CO.
GRAND HAVEN, MICHIGAN

BREVITY—Identify by IEN - 11867 if you write the maker

Tumbler for Fibre Drums made in single and dual units

Vol-U-Meter

The machine shown here tumbles fibre drums at an approximate speed of 45 r.p.m., using a ¾ H.P. motor on the dual and a ½ H.P. motor on the single unit.

Containers of the same diameter but different heights can be handled by using a spacer at end of shorter drum. If preferred cages for two different drum diameters can be supplied with the dual unit. The loading skids are optional and extra.

Use of a rectangular cage amply supports the drum and protects it against both side and end injury. One side of cage is removable for loading.

THE VOL-U-METER COMPANY
BUFFALO 16, N. Y.

BREVITY—Identify by IEN - 11868 if you write the maker

NEW THREAD COMPOUND Licks Stud Freezing Even at 1800°F.!

SAFE for all high temperature applications!
SAFE for Stainless and Alloy Steels, too, will not pit or corrode!
IDEAL as a cutting compound to prevent galling of Stainless Steel!

FREE TEST SAMPLE! Send for YOURS *TODAY*

Make a convincing test of Fel-Pro C-5 "Hi-Temp" Thread Compound at our expense. Then you can be sure that C-5 will do everything we say it will do. See how it cuts heater dismantling time—how it cuts costly stud breakage and eliminates pitting. Then you will standardize on C-5 just as have some of the nation's largest refineries, utilities and process industries. Write for FREE Sample and data sheet TODAY!

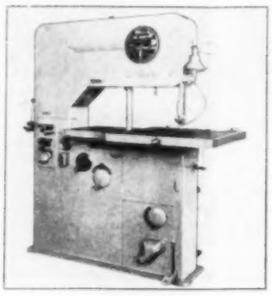
FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

FELT PRODUCTS MFG. CO.
1523 CARROLL AVENUE • CHICAGO 7, ILLINOIS

BREVITY—Identify by IEN - 11869 if you write the maker

SAWING . . Band saw machine, 36 in. stroke, 25 to 6,000 fpm.

Source: DOALL CO.
252-56 N. Laurel Ave., Des Plaines, Ill.



New size in a line

Saws, files or abrasive bands to ½ in. in width can be mounted in this new Type V-36-3 band-saw machine. It has been designed for work in ferrous and non-ferrous metals and composition materials. It applies in sawing, filing and in light-gage alloy-metal friction cutting. Floor space measures 40 by 76 inches. Overall height is 81 inches.

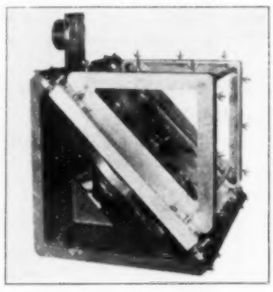
The machine is equipped for general-purpose contour work. Assembly includes a squaring shear and blade welder, moto-driven weld grinder, thickness gage, assorted band tools and guides, power feed, job-selector dial, speed indicator, dust spout, adjustable light, chip blower.

Normal operation mounts the band to ride over three wheels but it can be carried over only the top and bottom ones if not more than a 16-in. throat is required. Drive is by a 3-hp. motor, three-speed transmission and variable-speed adjustment for stepless range between 25 and 6,000 fpm.

BREVITY—Identify by IEN - 11870 if you write the maker

TESTING . . Vibrating stand for instruments weighing to 20 pounds

Source: VIBRATION SPECIALTY CO.
1534-38 Vine St., Philadelphia 2, Pa.



Simulates service conditions

Two sliding plates, one upon the other, are mounted on the inclined base in this new Type V-2 test stand. They are connected by an eccentric to a motor drive in the base so one plate operates horizontally and the other at right angles to it. The resulting movement is three directional. Equipment to be tested is secured to the top face or the vertical face of the triangular table mounted on the top plate of the new test stand.

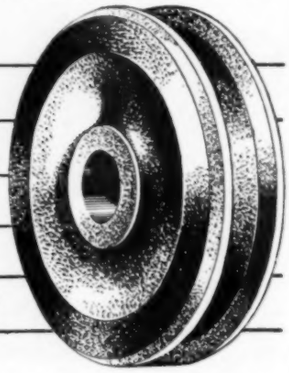
Three types are included in the line, one completely magnetic, a second non-magnetic with the exception of the bearings. The third is completely non-magnetic. Mounting surfaces measure 15 by 15 inches.

Drive is by a variable-speed motor for vibration frequency between 500 and 3,000 or between 600 and 3,600 cycles per minute. The motor rates ½ hp. and operates on 110/220-volt single-phase ac. Amplitude is maximum at 1/16 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11871 if you write the maker

WROUGHT STEEL CRANE WHEELS by STANDARD



Built for *extra* service by a pioneer producer of railroad wheels, under continuous quality-control from melting of metal to final finishing. Rugged, tough, strong, durable. Available in a range of sizes. Prices on request.

BALDWIN-LIMA-HAMILTON CORPORATION
PHILADELPHIA 42, PA.

Offices: Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, Washington.

BALDWIN-LIMA-HAMILTON

BREVITY—Identify by IEN - 11872 if you write the maker

Chem-Board Tote Boxes

HELP BUILD RADAR

Much of the radar needed to scan the skies for our country's safety is being built from materials and parts carried to production lines in Convoy Chem-Board Tote Boxes. The self-stacking boxes illustrated seal their contents from dust and light . . . stack to ceiling without support.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made Nesting—Stacking—Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P.O. Station B, Box 216-I
CANTON 6, OHIO

BREVITY—Identify by IEN - 11873 if you write the maker

HOLLEY DISCOVERS HOW TO SPARK A CARBURETOR IMPROVEMENT WITH ACE PRECISION NYLON BALLS

Holley Carburetor Co., Detroit, uses Ace Nylon Balls as check valves in carburetors to permit a higher degree of spark advance.

For the first time . . . DuPont Nylon FM # 10001 balls mass-produced to close tolerances. The result . . . toughness at low temperatures, form stability at high temperatures, light weight, chemical and abrasion resistance.

SIZES 1/8" - 3/4"
TOLERANCES ± .001

Hundreds of Industrial Applications! Let our engineers advise you. *Request samples and bulletin TODAY*

ACE PLASTIC COMPANY
Precision Plastic Fabricators and Extruders

91-24 VAN WYCK BLVD. • JAMAICA 2, N. Y.

BREVITY—Identify by IEN - 11874 if you write the maker

PROTECT

your expensive dies and machine parts

USE **ACME** RED OR BLUE LABEL PRECISION **DOWEL PINS**

Acme Dowel Pins break before bending or mushrooming—thus saving expensive equipment from ruin through misalignment. Order standard sizes from stock. Attractive prices on special sizes and large quantities.

WRITE FOR DESCRIPTIVE CIRCULAR

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. 16th Street • Chicago 7, Illinois
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

BREVITY—Identify by IEN - 11875 if you write the maker

Bulletin 8210

General Purpose Control Valves

- ★ Full Port Area—Packless
- ★ For Air, Gas, Water, Brine, Freon, Methyl Chloride, Light Oil and other Liquids and Gases up to 212°F, Pressures up to 400 pounds
- ★ Several Auxiliary Variations
- ★ Several Sizes: ½ to 2½ inches

Our Bulletin 8210 Solenoid Valves are designed for those shut-off requirements where a simple, rugged, automatic control will serve. They close instantly when current to the coil is cut off. Full line pressure on top of the valve piston aided by a powerful spring assures tight closing. They reopen fully when the coil energy is restored.

Bulletin 8211 Valves are similar except that they have Explosion-Proof Solenoids approved by Underwriters' Inc., Class 1, Group D, Hazardous Location.

ASCO Solenoid VALVES

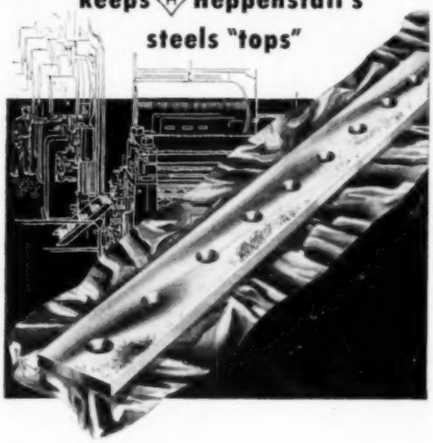
If you have any automatic control problems that fit into the above class, study fully the merits of Asco Bulletin 8210 and 8211 Solenoid Valves. Write us anyway, regardless of your problems, because we have many other types of solenoid valves.

When in need of Electromagnetic Controls, come to us.

Automatic Switch Co.
383 Lakeside Avenue, Orange, New Jersey

BREVITY—Identify by IEN - 11876 if you write the maker

preventive packaging in SPARKLING Alcoa Foil keeps Heppenstall's steels "tops"



Heppenstall makes top-flight steels. To see that they stay that way, they package their shear knives in Alcoa Aluminum Foil.

Before adopting Alcoa Foil, Heppenstall sometimes found customers stored their highly polished shear knives under adverse atmospheric conditions, pending installation. Corrosion resulted and knives had to be returned for resurfacing, even though they had never left their original crates.

Now, a sheath of sparkling Alcoa Aluminum Foil guards each gleaming surface. Easily and quickly applied, over a flushing compound, it is the "ounce of prevention" that assures perfect product protection . . . from shipping—through storage—to use.

ALCOA

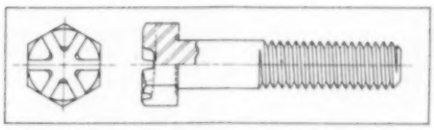
Alcoa sales engineers are readily available to discuss your packaging problems, to explain current Government packaging requirements. Just call your local Alcoa sales office, listed under "Aluminum" in your classified phone directory, or write:

ALUMINUM COMPANY OF AMERICA, 1766L Gulf Building, Pittsburgh 19, Pennsylvania.

BREVITY—Identify by IEN - 11878 if you write the maker

FASTENING . . Lock bolt absorbs impact, holds against vibration

Source: NATIONAL SCREW & MFG. CO.
2441 E. 75th St., Cleveland 4, Ohio



Holds by spring action in head

The head of this new Place lock bolt carries upset slots that divide it into six equal segments. A circular recess under the head adjacent to the shank moves the bearing area outward to establish a lever action. Upward pressure on this bearing area displaces the segments on the head when the bolt is drawn tight to lock against vibration and absorb shock.

Grain flow is continuous through the shank and head segments. Shear section through the head provides greater strength than the equivalent area of the thread. The bolt is available in carbon and alloy steel with American Standard coarse and fine-pitch threads from ¼ to 1 inch.

BREVITY—Identify by IEN - 11879 if you write the maker

LUBRICATING . . Soluble oil for use in metal cutting operations

Source: MOTCH & MERRYWEATHER MACHY. CO.
715 Penton Bldg., Cleveland 13, Ohio.

Keeps tools free from chips

Triple-Chip Anti-Weld is a new soluble oil. It produces a stable emulsion in mixture with water for use in the coolant circuits on machine tools, particularly those subject to heavy-duty metal cutting. The emulsion is resistant to contamination by acid and alkali. It provides excellent heat transfer from the work and tools. It protects the work against corrosion. It is non-injurious to the skin. It is odorless and will not smoke. It adheres tightly to the surfaces of work and tools.

BREVITY—Identify by IEN - 11880 if you write the maker

VALVE . . Pneumatic check unit handles pneumatic pressure to 2 ton

Source: BOBRICK MFG. CORP.
1837 Blake Ave., Los Angeles 39, Calif.

Small but husky

Main housing of this new check valve is made of stainless steel to meet Specification AN 6249-6. The two end fittings are in accordance with AND 10056 for ⅜-in. tubing. The assembly measures about 2⅞ in. in length and weighs about 3½ ounces. It has been designed for use in high-pressure pneumatic lines but can be applied also in hydraulic lines operating at pressures to 5,000 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11881 if you write the maker

IT'S ALLIED FOR RCA electron tubes for industry

ALL TYPES IN STOCK
- Vacuum Power
- Thyratrons
- Vacuum & Gas. Rectifiers
- Ignitrons
- Cold-Cathode
- Phototubes
- Oscillograph Tubes
- Camera Tubes
- Monoscopes
- Special Types

Quick, Expert Service on all RCA special-purpose industrial tubes

ALLIED maintains in stock *for quick shipment*, the world's largest distributor inventory of RCA special-purpose tubes—*of all types*. We specialize in supplying the needs of industrial, broadcast, governmental and other users. To save time, effort and money—phone, wire or write to ALLIED for *quick* shipment. Fill *all* your needs from the *complete, dependable* electronic supply source.

FREE Interchangeability Directory

Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for Free RCA Guide No. 57-040.

see your 1952 ALLIED catalog

Refer to your ALLIED Catalog for *all* electronic supplies—parts, tubes, test instruments, tools, audio amplifiers, accessories—available from the world's largest stocks. Write today for your FREE copy of the *complete* 212-page 1952 ALLIED Catalog.

ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-L-1
Chicago 7, Ill.

Everything in Electronics from ONE Source

BREVITY—Identify by IEN - 11882 if you write the maker

your Royal dealer could give you 'One-month' delivery...maybe!

Why does it take so long to get delivery on Royal furniture? Here are four very good reasons...

1. Government purchasing demands have increased.
2. Material shortages and restrictions have developed.
3. D.O. orders take priority over non-defense production.
4. The overwhelming increase in Royal's popularity on today's consumer market!

If you can wait...you'll be wise to wait for Royal!

Royal
METAL FURNITURE SINCE '97

ROYAL METAL MANUFACTURING COMPANY
175 NORTH MICHIGAN AVENUE · CHICAGO 1
New York · Los Angeles · Michigan City, Ind. · Warren, Pa. · Preston and Galt, Ontario

BREVITY—Identify by IEN - 11883 if you write the maker

PUTS OUT FIRES FASTER with ORDINARY WATER

ROCKWOOD TRIPLE-ACTION SG-48 WaterFOG NOZZLE

Rockwood triple-action SG-48 WaterFOG Nozzle a truly all-purpose nozzle that extinguishes and controls fires in flammable liquids and ordinary combustibles with plain water. Protects operator from funes and heat. Discharges *high velocity*. WaterFOG, straight stream and *low velocity* WaterFOG. Available for service on fire hose lines in ¾" — 1" — 1½" and 2½" sizes. Approved by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories.

Write for complete information and prices on Rockwood's growing family of portable fire fighting products.

ROCKWOOD SPRINKLER COMPANY
40 HARLOW STREET WORCESTER 5, MASS.

Portable Fire Protection Division . . .

BREVITY—Identify by IEN - 11884 if you write the maker

FREE MANUAL tells how DY-NAMIC BALANCING CAN IMPROVE YOUR DEFENSE PRODUCTION!

This New "Bear" Manual will show you how Dy-Namic Balancing can aid your defense production program these two ways:

1 Improve finished product performance by eliminating mechanical failures and assuring greater efficiency and longer life. Gives you the quality standards to help meet many government contract specifications.

2 Keep your own equipment operating without interruption. Periodic checking and Dy-Namic Balancing of rotating parts in your machinery and production equipment will reduce bearing wear and noise and eliminate costly downtime for repairs.

Write today for your free copy. Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

24 PAGES OF VALUABLE INFORMATION LIKE THIS:
- How To Balance Parts From 4 Oz. to 8 Tons!
- What Is Dy-Namic Un-balance?
- The Difference Between Static and Dy-Namic Un-balance!
- How To Balance Rotating Parts Statically and Dy-Namically In One Operation!
- How Other Plants Are Using Dy-Namic Balancing To Save Time and Money!
- How Dy-Namic Balancing Improves Product Performance!
- How Dy-Namic Balancing Reduces Wear, Eliminates Noise And Vibration.
- Details, Specifications And Engineering Data About Complete Line of "Bear" Industrial Dy-Namic Balancing Machines.

5472

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES

BREVITY—Identify by IEN - 11885 If you write the maker

Velvet-Smooth

Dual V-Belt Drive

You will like the smooth, vibrationless, dual V-belt drive—that protects the motor from shocks and stalls—eliminates gears and gearboxes, and oil and grease leakage that spoils clean wood—in this radically improved saw design. Here is a heavy duty saw for professional use.

Write for FREE Illustrated Literature

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 11886 If you write the maker

SPEEDS POLISHING and BUFFING

• New-type, air-inflated polishing wheel does better job easier and faster. **Prove it** yourself with free trial! Write us NOW.

NU-MATIC GRINDERS

$17.50 each
F.O.B. Cleveland
Wheel with abrasive band, only)

Send for FREE Illustrated Literature

● Just inflate the rubber drum with 3 to 10 lbs. air pressure, depending on operation. You easily vary the air pressure as well as type and number of grit . . . to achieve an infinite variety of operations on **any** surface. Dynamic balance . . . no chatter or bounce. Eliminates hand filing.

Faster, better, easier . . . on stands, portable tools, backstand idlers . . . wherever ordinary grinders are used . . . on any kind of surface. On flat surfaces, Nu-Matic presents far greater contact area because Nu-Matic is resilient! And it produces a straight pattern . . . like a hand finish.

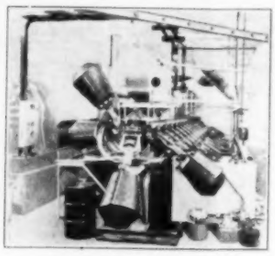
Write NOW for your 25-day FREE TRIAL, complete instructions and illustrated literature. Send trial purchase order, or request a trial Nu-Matic on your letterhead. No obligation. Nu-Matic Grinders, Inc., 8221 Carnegie Ave., Cleveland 3, Ohio.

BREVITY—Identify by IEN - 11887 If you write the maker

BREVITY—Identify by IEN - 11888 If you write the maker

PLATING . . Automatic machine moves, rotates barrels in closed circuit

Source: FREDERIC B. STEVENS, INC.
18078-02 18th St., Detroit 16, Mich.



Industrial merry-go-round

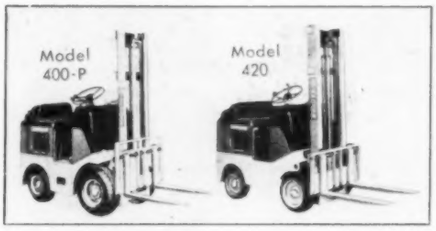
Perforated barrels are hinged to a closed-circuit chain conveyor in this new Super-E automatic machine. They are supported by arms and are assembled to rotate on their axes by gear connection to longitudinal worms mounted on the machine. The worms are driven by a motor with suitable gear reduction or variable-speed transmission. The load roller under each barrel arm rides a track that causes the barrel to rise and fall as it moves along between and over the various tanks in a pickling, processing or plating installation.

The machine operates intermittently so each barrel advances 36 in. during each period of movement, then comes to rest so far as the longitudinal movement is concerned. Rotation is constant. A blower-type drier forces heated air through the open top of each barrel as it comes into drying position. Operation can be completely automatic by installation of handling equipment at the loading and unloading stations. The company is prepared to supply the equipment in required size and arrangement for given work and type of processing.

BREVITY—Identify by IEN - 11889 If you write the maker

TRUCK . . Engine driven fork design, hydraulic lift, 1 to 2 ton ratings

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio



Pneumatic tires for rough going

The company announces five new models in its line of engine-driven fork-lift trucks. Three are mounted on solid rubber tires. Two have pneumatic tires. Wheel base measures 39 to 48 inches. Travel speed is maximum at 8 to 12 miles per hour. Operation can be maintained in intersecting aisles measuring 61 to 71 in. in width.

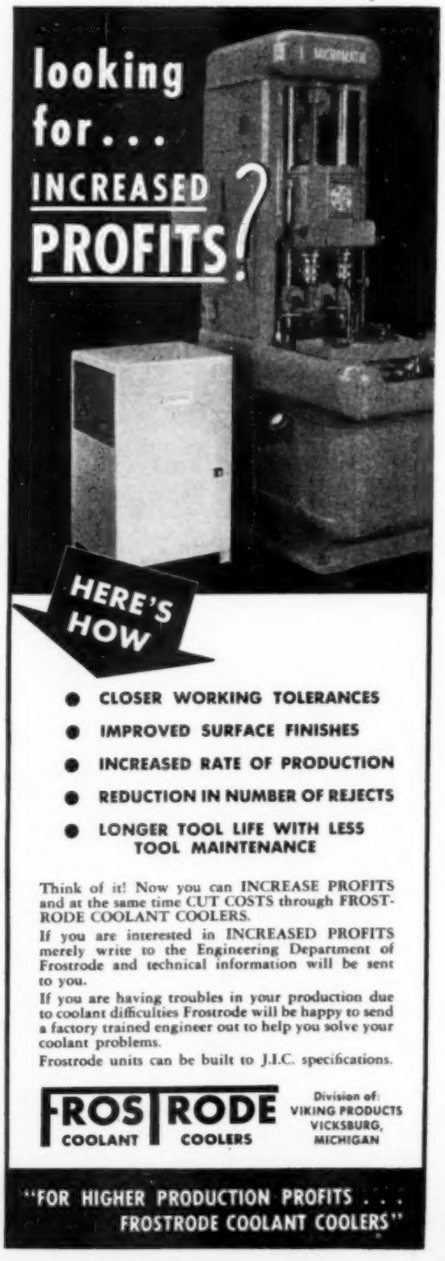
In each case the operator rides on an upholstered seat with controls in reach for travel forward or reverse, tilt forward or reverse, load lifting and lowering. The new designs are known as Model 390, 420, 460, 400-P and 480-P. Specification sheets are available on each upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11890 If you write the maker

BREVITY—Identify by IEN - 11891 If you write the maker

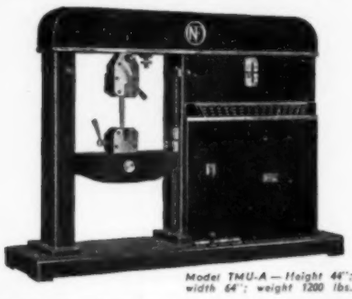
BREVITY—Identify by IEN - 11892 If you write the maker



BREVITY—Identify by IEN - 11894 if you write the maker

It Will Pay You to Make Your Own Tests with

NATIONAL FORGE UNIVERSAL TESTING UNITS



Model TMU-A — Height 44"; width 64"; weight 1200 lbs.

The National Forge Universal Testing Machines are compact, accurate, dependable, easy to operate and moderately-priced.

Wide working clearances, long stroke, quick-action simplified variable-speed control, improved grips and a wide spread of load scale ranges adapt this modern, streamlined unit to production, research or school instruction tests of a great variety of materials and specimen sizes. A.S.T.M. accuracy requirements are guaranteed.

Three load scale ranges: Model TMU-A—0-30,000, 0-6000, 0-600 lbs. Model TMU-B—0-15,000, 0-3000, 0-300 pounds.

PROMPT DELIVERIES OF FEW UNITS REMAINING IN STOCK.

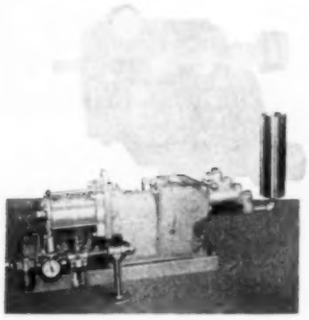
For details, write for Brochure 501.

TESTING MACHINE DIVISION

NATIONAL FORGE & ORDNANCE COMPANY

Dept. EN — Irvine, Warren County, Penna.

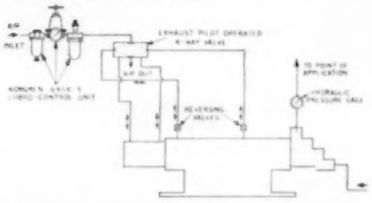
BREVITY—Identify by IEN - 11895 if you write the maker



Why EVERY MILTON ROY air-powered pump includes a NORGREN Lubro-Control Unit:

1. ***Closely Controlled*** balance between air and hydraulic pressures is vital.
2. Positive, automatic lubrication of valves and cylinders is essential.
3. Roy engineers proved Norgren units mean "reliable, trouble-free, long-lived service."

This customer states: "Norgren Lubro-Control Units meet ALL of our requirements. We have standardized on Norgren units for all our air-powered pumps."



Progressive industries are finding almost limitless new, profitable uses for air power. This demands *clean air, controlled air, and automatic oil-fog lubrication*—be sure to check with Norgren!

For complete details, write for APPLICATION DATA SHEET No. 112 C. A. Norgren Co., 232 Santa Fe Drive, Denver 9, Colo.

25th Year of Progress

VISIT OUR BOOTH PLANT MAINTENANCE SHOW PHILA. JAN. 14-17

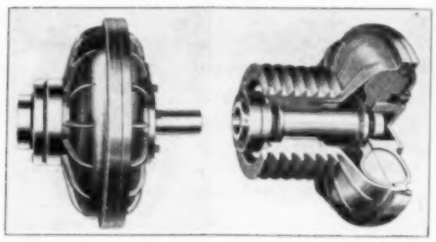
Norgren

LUBRICATORS, REGULATORS, FILTERS, VALVES, HOSE ASSEMBLIES

BREVITY—Identify by IEN - 11897 if you write the maker

DRIVE . . Hydraulic coupling, 1½ to 25 hp., drives shaft or sheave

Source: LIQUID DRIVE CORP. 318 N. Saginaw St., Holly, Mich.



Cushions equipment operation

New Type TF to mount on a motor shaft and drive an output shaft has been added to the company's line of Nelson hydraulic couplings. Two new sizes, rating 20 and 25 hp. at 1,800 rpm., have been added to the Type-TS sheave-equipped assembly, previously described IEN-7269-50. Both units are available in ratings from 1½ hp. at 1,200 rpm. to 25 hp. at 1,800 rpm. Maximum shaft bore to mount on a motor ranges from 1 to 1⅞ inches. In the case of the sheave-equipped assembly, mounting for the sheave is directly over the motor shaft and construction of the coupling itself is largely in aluminum to minimize overhang pull and weight.

The inner sleeve is secured to the motor shaft and carries a ring of impeller blades adjacent to a similar ring of blades mounted in the outer housing. Rotating movement on the drive side forces oil contained in the housing to impinge against the vanes on the driven side. This results in rotation on the driven side in ratio to the force imparted to the oil and its quantity contained within the housing.

BREVITY—Identify by IEN - 11898 if you write the maker

ELEVATOR . . Sectional assembly for construction, maintenance, ½ ton

Source: WILSON-ALBRECHT CO. 3561 Wooddale Ave., Minneapolis 16, Minn.

Rolls to the job

Triangular sections, 5 ft. in height, assemble in the tower structure of this new wheel-mounted elevator. Five sections are supplied to make an overall height of 33 ft. above the ground in the new Model 900. A motor or engine-driven power unit and 100 ft. of ¼-in. steel cable are included with a 40½ by 60-in. platform and the base and controls that provide remote limit-stop action.

Two of three power units employ 1½ and 3-hp. single-phase 110/220-volt reversing motors for lift speed at 55 and 110 fpm. respectively. The third unit includes a 6-hp. Wisconsin gasoline engine for hoisting speed of 110 ft. per minute. A safety slack brake and a built-in slow-up brake are included. The base wheels are equipped with pneumatic tires. Leveling screws are built in.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11899 if you write the maker

MAN SAVER

Sweeps up to 400% faster than costly pushbroom cleaning . . . saves money . . . saves manpower

A Parker Floor Sweeper saved $2100 a year for a food manufacturer — $520 a year for a lumber yard—75% of all sweeping costs for a building material manufacturer. *You, too, can save.*

Sweeps all type floors. Collects and sweeps in one operation. Easy to empty. A money-saver for any plant from small garage to large factory or warehouse.

Now available — information file containing time studies, case histories, and full details. *Write, wire, or telephone today.*

FACT FILE AVAILABLE

PARKER INDUSTRIAL FLOOR SWEEPER

PARKER SWEEPER CO. — 31 Bechtle Ave., Springfield, Ohio

BREVITY—Identify by IEN - 11900 if you write the maker

Users Tell Our Story Best!

163 ORDERS FROM 3 CUSTOMERS ALONE...TOTALED 1,421,402 LBS.

SPEED PATCH

WORLD'S FINEST, FASTEST, FLOOR FIXER!

TAKES ONLY ONE MINUTE PER SQUARE FOOT!

Think of it...just 3 customers purchased almost 1½ million lbs. of Speed Patch. And more orders are coming from them regularly. They have ordered loads of other Rock-Tred products as well. Must be good. Let their experience be your guide. Find out how Speed Patch can make your floors pay off in cash. Write today!

ROCK-TRED Corporation

Manufacturers of a Complete Line of Building Maintenance Materials

7440-7450 North St. Louis Avenue • Skokie, Illinois

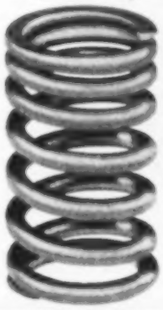
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

BREVITY—Identify by IEN - 11901 if you write the maker

TEMPERED WIRE

Better products . . . better production with Roebling Oil-Tempered Spring Wire

EVERY INCH of Roebling Oil-Tempered Spring Wire is exactly like every other inch. It's a *quality* wire, mechanically and metallurgically uniform from end to end...saves preparation time . . . brings fewer machine stoppages . . . minimizes the number of rejects.



Roebling's is one of the nation's largest specialty wire mills. From steel-making to finished product every manufacturing step is performed in Roebling's plants. Today large quantities of this wire are required in the rearmament program, but we will always do our best to meet your delivery and service requirements. John A. Roebling's Sons Co., Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 11902 if you write the maker

WHITNEY CHAIN

Takes the Problem out of your Power Drive Designs

Because Whitney Chains are extremely flexible and adaptable to a wide variety of designs, they meet practically all transmission requirements. Their positive grip delivers full power without slippage . . . assures uniform speeds. Their rugged construction and hardened-alloy-steel parts provide maximum service with low maintenance. Investigate Whitney Chains and Cut Tooth Sprockets . . . the *all steel drives* for your designs and equipment. Write:

WHITNEY CHAIN COMPANY

202 Hamilton Street — Hartford 4, Connecticut

BREVITY—Identify by IEN - 11903 if you write the maker

Hard To Find ..but we have them!

Lathe Cut Parts
Recessed Bumpers
Mushroom Bumpers
Plug-Type Bumpers
Grommets
Suction Cups
Chair Tips
Tack Screw Bumpers

WORLD'S LARGEST ASSORTMENT OF STANDARD MOULDS FOR SMALL MECHANICAL RUBBER PARTS

SAVE MONEY! SEE US BEFORE YOU DESIGN IT!
Write, wire or phone your needs today! Chances are we have just the mould you want! Lowest possible prices — prompt, efficient service. Request new 44 page catalog, today.

LAVELLE Rubber Company
1811 W. Hubbard St., Chicago 22, Ill.

BREVITY—Identify by IEN - 11904 if you write the maker

Safety STEEL STEP LADDERS

FOR EVERY NEED

With safe, sure footing anybody reaches high places easier, with a sense of security that permits complete freedom of action to get the job done. Ballymore Ladders are sturdy and safe, can't roll when in use or kick out, have lots of foot room, strong hand rails. All welded construction. Ball bearing casters permit easy movement without lifting. One to three steps without hand rails. Three to eight steps with hand rails. "Special" models.

WRITE TODAY FOR COMPLETE CATALOG

BALLYMORE CO
WAYNE 4, PA.

BREVITY—Identify by IEN - 11905 if you write the maker

NOW . . . live rubber added to INCREASE STRENGTH 200%

TAMP LEVEL... and use it!

IMMEDIATE-SET FLOOR PATCH

The highly resilient, "fighting-back" quality of rubber triples the resistance of IMMEDIATE-SET to point loads, impact and shock. At sub-freezing temperatures the increase is much greater. For inside or outside use.

This is an entirely new idea. Results are amazing. Try it and be convinced.

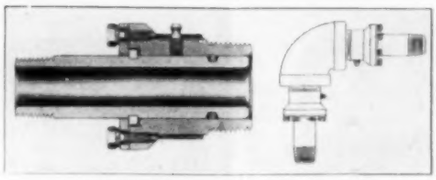
WRITE FOR COMPLETE DATA TODAY

FLASH-STONE CO.
INCORPORATED
36 E. RITTENHOUSE STREET
PHILADELPHIA 44, PA.

BREVITY—Identify by IEN - 11906 if you write the maker

PIPE FITTING . . Swing joint permits rotation in connected lines

Source: BARCO MFG. CO.
1804 W. Winnemac Ave., Dept. J-6, Chicago 40, Ill.



Note long sleeve bearing

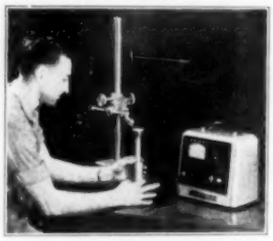
Swing Joint Style 5011 is a new design in the company's line of rotary joints. This particular new unit is available in sizes from 1 to 3 inch. It is made with a steel sleeve and malleable-iron housing. A thrust ring, secured under a flange, rides in a recess in the sleeve to take thrust in either direction. An O-ring between the sleeve and the housing prevents axial leakage. The joint can be used singly or in multiple with elbows to provide for relative rotation in one or several planes.

Bulletin, "Announcing Barco Swing Joints", 4 pages, illustrates and describes threaded and flanged assemblies in a range of sizes between ¾ and 12 in. for pressures to 100 lb. and temperature to 225 deg. F.

BREVITY—Identify by IEN - 11907 if you write the maker

GAGE . . Electronic comparator reads over and under a master dimension

Source: SHEFFIELD CORP.
719-23 Springfield Ave., Dayton 1, Ohio



Height to a split hair

Variation in work height to plus or minus 0.0015 or 0.003 in. can be read on this new dual-scale height-indicator gage following initial set-up to a master. The instrument is designed for use in a tool room and for receiving departments as well as process and final inspection where accurate check is required from a surface plate.

The electronic gage head provides 1,000 and also 2,000 to 1 amplification. Vertical capacity is maximum at 26 inches. Throat capacity is 4½ to 11 inches. A sensitive adjustment knob on top of the pick-up unit that mounts on the gage column provides maximum adjustment of 0.010 in. of gaging stylus. The mounting bracket is adjustable vertically on the column to any point within an 18-in. range by means of a rack and pinion. Pick-up head can be rotated and locked in any position through a complete circle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Try product and function listing in the index, page 118

BREVITY—Identify by IEN - 11908 if you write the maker

INVESTIGATE STACON CHEKCHART your Temperature CONTROL INVESTMENT

Before you select a Temperature Regulator, compare low-cost Stacon with the rest. No other regulator has as many features or offers as many advantages as a Farris Stacon.

PROVE IT!

Make this Chekchart Test

	Farris Stacon	Air Operated	Self Operated
• Dirt Proof — Hermetically Sealed?	Yes		
• Extreme Accuracy?	±1°		
• Packing or Glands to Leak?	No		
• Drop-tight Shut off?	Yes		
• Vapor-steam Energized Super Power Pilot?	Yes		
• Supervision—Maintenance?	None		

Write for Stacon Bulletin 50-1000. It contains complete information on the most sensitive, accurate, economical temperature regulator available . . . anywhere.

Farris Stacon Corp.
432 COMMERCIAL AVE. PALISADES PARK, N. J.

BREVITY—Identify by IEN - 11909 if you write the maker

the wheelco recorder

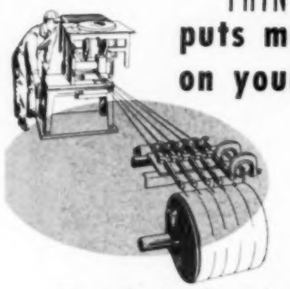
Accurate to ¼ of 1% of scale . . . specify the economical Wheelco Capacilog, for measurement, indication, control and permanent record. Bulletin C2-2 for complete details.

Wheelco instrumentality in action—Wheelco Instruments Company, 845 W. Harrison Street, Chicago 7, Illinois

wheelco electronic controls

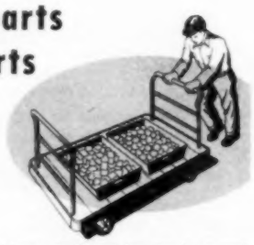
BREVITY—Identify by IEN - 11910 if you write the maker

THINSTEEL puts more steel on your reel



The combination of extra-long coils (200# per inch of width and up) and more ft. per lb. in Thinsteel is a real aid to production scheduling. Because Thinsteel provides the maximum lineal feet of cold rolled strip steel per lb. for thickness specified, in the longest practical coils for the width involved, there are real opportunities to increase production, reduce manufacturing costs, and cut machine down time.

... more parts in your carts



The tangible evidence is found in the increased yield of finished parts per ton of Thinsteel processed. Characteristic of Thinsteel, because of CMP's precision processes, you suffer no footage loss due to oversize variation in gauge.

ANYTIME

So, when you check your present yield, remember that with Thinsteel you can count on the extra footage that adds up to increased production. Of course, today, Thinsteel production is directed first to defense needs but whether for defense or regular civilian end-use manufacture, it is a helpful answer in stretching steel supply.

CMP THINSTEEL

the Cold Metal Products co.
YOUNGSTOWN 1, OHIO
New York • Los Angeles • Indianapolis
Chicago • St. Louis • Detroit • Cleveland

BREVITY—Identify by IEN - 11912 If you write the maker

Clarke CLICKS with CUSTODIANS!

Where floors take a beating...

CLARKE FLOOR MAINTAINER
Scrubs, waxes, polishes, steel wools, sands and shampoos. Improved safety switch. "Self-lifting" wheels. Four sizes.

CLARKE PORTABLE WET and DRY VACUUM
Quickly picks up water, dirt and dust. Quick-draining dump valve eliminates heavy lifting. Mounted on ball bearing, swivel, rubber casters

there is nothing like Clarke equipment. Custodians like Clarke machines because they make work easier and do it faster. You'll like Clarke because it's dependable—built to give years of hard service at low initial and upkeep cost. Let us prove on your own floors why Clarke machines have long been preferred for better floor care. Write for information or a demonstration.

Sales and Service Branches in All Principal Cities

Clarke

CLARKE SANDING MACHINE COMPANY
2811 Clay Street Muskegon, Mich.

BREVITY—Identify by IEN - 11913 If you write the maker

CUT COSTS faster

BY CUTTING with STONE High-Speed CUT-OFF MACHINES

Production cutting of ferrous and non-ferrous metals at the rate of 4 seconds per square inch.

Powerful and ruggedly built, flexible and easily operated, Stone High Speed Cut-Off machines are ready to give you all the advantages of fast, clean, low-cost abrasive cutting. The geared-in-head motor on each model is engineered without the use of belts, an exclusive Stone feature permitting delivery of maximum constant power. Result: Increased cutting speed affords greatest efficiency and insures longer wheel life.

STONE Swing-Cut M14

32" x 34" bench model

- Full 3½ h.p. geared-in-head motor engineered with positive drive.
- Cutting head swivels up to 45° in either direction for angle cutting.

CAPACITY
Ferrous and non-ferrous solids up to 1½" — pipe and structurals up to 2½".

STONE Swing-Cut M16

Floor Model — Min. space required: 2½' x 4'

- Full 5 h.p. geared-in-head motor engineered with positive drive
- Self-centering vise mounted on swivel plate permits quick change for cutting any angle up to 45°

CAPACITY
Ferrous and non-ferrous solids up to 2½" — pipe and structurals up to 4". Can be equipped for Wet Cutting.

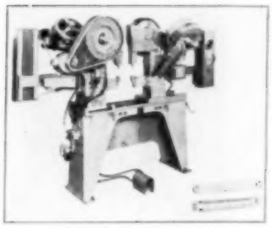
Write for Further Information

STONE MACHINERY CO., INC.
310 Fayette St. Manlius, N. Y.

BREVITY—Identify by IEN - 11915 If you write the maker

RIVETING . . Double head machine feeds and sets two Fabri-Steel nuts

Source: TOMKINS-JOHNSON CO.
615-19 N. Mechanic St., Jackson, Mich.



Assembled standard units

New assembly of the company's Clinchor riveting head with magazine feed and motor drive applies to feed and set two Fabri-Steel nuts measuring ⅜ by ½ by $\frac{5}{16}$ inches. The anvil position of the left-hand head is adjustable front-to-back and also vertically. The anvil in the right-hand head is adjustable from right to left only. Both heads are tripped by one foot-operated valve. The nuts are set near the two ends of a strip-type work piece, shown to the right in the illustration.

BREVITY—Identify by IEN - 11916 If you write the maker

WATER PROOFING . . Coal tar pitch to brush or spray, concrete, metal, wood

Source: FLASH-STONE CO.
36 E. Rittenhouse St., Philadelphia 44, Pa.

Resists cracking and melting

Tarlac trade names a new emulsion of coal-tar pitch and water to form a permanent suspension that can be brushed or sprayed. The material is recommended as a protective coating for concrete and wood and also as a protection for metals exposed to the weather and to corrosive fumes. Following application, the material dries to a tough flat black film that is insoluble in water, oil or gasoline. Packaging is in 5-gal. pails. Coverage is to 300 sq. ft. per gallon. Temperature range at which the coating remains serviceable is between minus 56 and plus 200 deg. F.

BREVITY—Identify by IEN - 11917 If you write the maker

PROTECTING . . Leather glove made with gauntlet or safety cuff

Source: PEERLESS GLOVE CO.
633 Eighth Ave., Grand Haven, Mich.

Work-Welt trade names a new chrome-tanned cowhide work glove in which the palm, thumb, forefinger and all of the finger tips are made of leather. A heavy work welt is sewed into the seam at the base of the two middle fingers to the palm piece to reinforce the glove at this point. Elastic across the back helps provide a good fit. The glove is available in one size.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

BREVITY—Identify by IEN - 11918 If you write the maker

See the new Heavy Duty No. 500 Speed Way ½" Speed Drill

- All Ball Bearing.
- Wide-face Helical Gears—precision hobbed from nickel alloy steel.
- Integrally Die Cast Aluminum Body and Frame —all structural and supporting members die-cast-in.
- More Powerful Heavy Duty Motor 5½ Amp. input and ⅛ H.P. output.
- No. 34B Jacobs Geared Chuck and finest Electrical Equipment.
- Compact, Powerful, Light—weighs only 10 lbs.

WRITE FOR CATALOG

SPEEDWAY MFG. CO.
1885 So. 52nd Avenue, Cicero 50, Illinois

BREVITY—Identify by IEN - 11919 If you write the maker

For High Production on Small Parts

LOW COST... AIR OPERATED

Han-D-Press

designed to meet high production schedules on

- ASSEMBLING
- STAKING
- RIVETING
- PUNCHING
- MARKING
- PRESSING

Bulletin No. 251 sent on request. Gives full description with engineering data.

Replace old hand-operated arbor presses with Hannifin's versatile "Han-D-Press"! Handle light production operations . . . faster . . . and at lower cost! Electric control. Hand or foot operated. Two popular sizes—½ ton and 1 ton.

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave., Chicago 24, Ill.

BREVITY—Identify by IEN - 11920 If you write the maker

Variable Speed Control for Light Machinery

Costs only a trifle — brings amazing results

Converts a constant speed motor to a variable speed drive . . . fits on standard motor shaft. Provides accurate, positive speed changes while the machine is running. With a turn of handwheel, you get exactly the right speed for every job under every changing condition. Sizes from ⅛ to 1½ hp—$7.50 and up. Write for Bulletin IN 66a-J.

Reeves Pulley Company • Columbus, Ind.
REEVES *Variable Speed Control*

BREVITY—Identify by IEN - 11921 If you write the maker

Switch to PLATECOIL for

(REPLACES PIPE COIL)

TROUBLE-FREE Tank Heating and Cooling

Platecoils have many times the useful life of pipe coils thus preventing many production delays. When repairs are necessary, plates are changed from outside the tank in a matter of minutes without dumping tank solution. You can save STEEL, MAN-HOURS and MONEY by using Platecoils and you will enjoy TROUBLE-FREE heating and cooling.

NEW Technical Manual No. P56 simplifies the solution of heat transfer problems. Send for your copy today.

SEE US AT THE CHEMICAL SHOW BOOTHS 707-708

PLATECOIL
Division
ROLL HOLD MFG. CO.
LANSING 1, MICHIGAN

BREVITY—Identify by IEN - 11922 If you write the maker

No time for this

SAVE LABOR Handle Barrels THIS Way

OLD WAY

An ordinary truck requires two or three men to pick up and move barrels and drums up to 800 pounds.

SABIN

ONE-MAN BARREL AND DRUM TRUCK

SIMPLE TO OPERATE. Just run truck up to container, hook on at top and pull back on handle to pick up load. **Exclusive Third Wheel Feature** ensures better balance and added safety in moving loads.

WRITE FOR BULLETIN NO. 49-A

THE SABIN MACHINE CO.
6540 Carnegie Avenue
CLEVELAND 8, OHIO

MODERN WAY

With a Sabin Type "L-3" Truck, ONE MAN does the same job with ease. You save time and cost of helpers.

BREVITY—Identify by IEN - 11923 If you write the maker

"AIR KING"

QUICK-ACTING, UNIVERSAL TYPE

HOSE COUPLING

A strong, durable coupling for quick, tight connections on field or factory air hose. Plain design—no parts to get out of order or clogged with dirt. Made in hose ends and male and female threaded pipe ends. Completely interchangeable. Patented safety locking device is proof against vibration and rough handling. Malleable iron (rustproofed) or bronze.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.

PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "G.I. BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

BREVITY—Identify by IEN - 11924 If you write the maker

30-DAY DELIVERY!

SIMPLEST... MOST COMPACT

O-M AIR HYDRAULIC WATER CYLINDERS

Speed production, cut costs and save space with Ortman-Miller cylinders. Full range of sizes (1½" to 8" bores) now *available for early delivery.* All machined steel and bearing bronze. Interchangeable parts and mounting brackets. Write today!

FREE TEMPLATES

Shows the full line in ½ scale. Request your free complete set now.

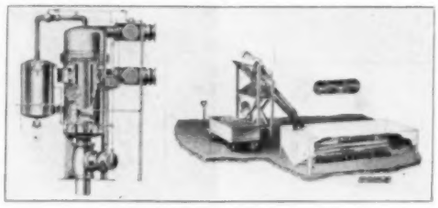
ORTMAN-MILLER

MACHINE CO., INC.
1208 150th Street • Hammond, Indiana

BREVITY—Identify by IEN - 11925 If you write the maker

FILTERING .. Automatic equipment separates solids from coolant fluids

Source: HONAN-CRANE CORP.
510 Indianapolis Ave., Lebanon, Ind.



Single unit rates 1,000 gpm.

Recently improved equipment in the company's line of automatic coolant clarifiers is announced for application as a central unit to serve a large number of metal-working machines in a closed circuit. In a typical application three of the assemblies serve 113 machines in an automobile plant.

Contaminated coolant collected at the various machines through pipe lines is pumped through an inlet to surround an assembly of cylindrical filter elements. The coolant passes through these elements to collect in clean storage at the top of the housing for return to the machines.

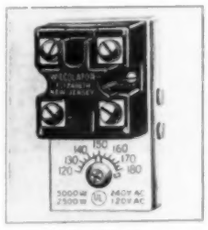
At intervals, determined by a timer, the inlet and outlet valves are closed by application to air pressure through a solenoid valve which the timer controls. At the same time a drain valve at the bottom is opened and pressure is admitted from a pneumatic surge tank at the side of the main housing into the clean-oil compartment. This forces the clean oil backward through the cylindrical elements to strip accumulated foreign matter which moves out through the drain. At the end of this backwash interval, the drain valve closes, the other valves open and filtering operation is resumed.

The drain delivers into a sump tank equipped with a built-in Houdaille conveyor and with baffles to promote separation of the solids. Coolant drawn from the sump for return to the main circuit. Solids are conveyed to a collecting point for disposal.

BREVITY—Identify by IEN - 11926 If you write the maker

THERMOSTAT .. For water heaters adjusts between 120 and 180 deg. F.

Source: WILCOLATOR CO.
1003 Newark Ave., Elizabeth 3, N. J.



Bimetal element

Model W is a new surface-type thermostat for use on water heaters, particularly those of table-top design where space is limited. The unit measures 1⅝ by 1¾ by 2⅞ inches. It is equipped with a mounting bracket to permit assembly either to the heating element screws on the heater or to the sides of the tank. The design is interchangeable with most other surface-type water-heater thermostats. The molded-plastic terminal blocks extend ¼ in. above the terminals to prevent accidental contact with them. The operating mechanism provides for fast break. It maintains full contact pressure to the opening instant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11927 If you write the maker

Motor Operation keeps door costs DOWN

KINNEAR Rolling Doors

These upward coiling, interlocking steel-slat doors are available with Kinnear Motor Operator and pushbuttons for near or remote control of opening and closing. Save time, manpower. Cut other costs, too. *Send for catalog.*

The KINNEAR Manufacturing Company

Factories: 2380-2400 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, California

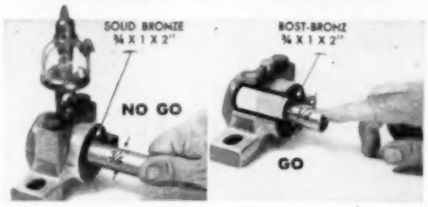
Offices and Agents in Principal Cities

Saving Ways in Doorways
KINNEAR ROLLING DOORS

BREVITY—Identify by IEN - 11928 If you write the maker

$3.32 SOLID BRONZE vs. $.90 BOST-BRONZ®

SAME SIZE



COST OF BEARING	$ .87	COST OF BEARING	$ .90
REAMING	.70	REAMING NOT NECESSARY	.00
GROOVING	1.40	GROOVING NOT NECESSARY	.00
DRILLING	.35	DRILLING NOT NECESSARY	.00
COST OF MACHINING	2.45	COST OF MACHINING	.00
NO GO	$3.32	GO	$.90

1. BOST-BRONZ requires .... NO REAMING NO GROOVING NO DRILLING
2. BOST-BRONZ gives better service and lasts longer, whether loads are heavy or light, static or shock.
3. BOST-BRONZ is cleaner — no oil drip or waste, no openings for grit, lint or dirt.

IN STOCK 589 SIZES Cylindrical Flanged **BEARINGS • BARS • PLATE**

Write for a FREE Sample!

BOSTON GEAR WORKS
63 HAYWARD ST., QUINCY 71, MASS.

BREVITY—Identify by IEN - 11929 If you write the maker

SPEEDY sez:

"When I want some wheel or roller conveyor in a hurry, I pick up the phone and call the local SPEEDWAYS distributor.

"He carries a good stock, and gives me fast service when I need it.

"Chances are there's a SPEEDWAYS Conveyor man in *your* city phone book too. Call him when you want *conveyors* and *accessories!*"

SPEEDWAYS GRAVITY "WHEEL" CONVEYORS support 70 lbs. per foot. Supplied in 5' and 10' straight lengths, 45° and 90° curves. Standard widths, 12", 15", 18". Light, sturdy, portable. Mounted on supports or casters. Set up in a jiffy, without tools.

ALSO—SpeedTUBE gravity roller conveyors; SpeedLIFT portable power belt boosters; SpeedBELT constant speed assembly belts. Switches, junctions, stands—full line of accessories.

FREE—Helpful bulletin "How to Order Correct Size Conveyor." Phone your local SPEEDWAYS man, or write us today. No obligation.

SPEEDWAYS Conveyors, Inc.
1244 Niagara St., Buffalo 13, N. Y.
Also Mfd. in Canada; Union of So. Africa

BREVITY—Identify by IEN - 11930 If you write the maker

THE DuKANE "HI-POWER" INTERCOM

Now Gives That Long-Needed EXTRA VOLUME...

for the noisy shop areas, large yards, warehouses, etc. Exceptional features and unlimited stations, with 12 watts of power, also make it a perfect sound system for the smaller school.

By the makers of **FLEXIFONE** *Intercom*

... models for every type business
... capacities to twenty ...

...and DuKANE SOUND SYSTEMS

... for the school, church, hospital, and factory

DUKANE CORPORATION • St. Charles, Illinois
(Established as "OPERADIO" 1922)

FREE CATALOGS

DUKANE CORP., Dept IEN-111, St. Charles, Ill.
Please send further information on
☐ Hi-Power ☐ Flexifone ☐ Sound Systems
Name
Address
City State

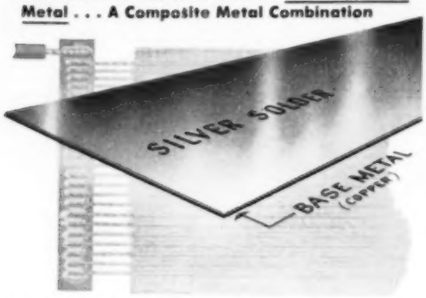
BREVITY—Identify by IEN - 11931 If you write the maker

PROBLEM:

How to Simplify and Speed Up Contact Brazing of Multiple Leads from a Screen

GENERAL PLATE

Provided the Solution with a "Solder-Flushed" Metal . . . A Composite Metal Combination



Recently a manufacturer had the problem of soldering leads from a screen to a copper strip. The old method required cleaning and positioning separate pieces of solder on each spot and then heat. This method was time consuming and costly.

General Plate Engineers solved the problem with "Solder-Flushed Copper Strip." Now the operation involves laying the leads on the strip and heating each wire. The result — a strong soldered joint at considerable savings in time.

General Plate "Solder-Flushed" metals can be supplied with solder to base or precious metal, copper layer for copper brazing or low silver content solder clad to base metal.

No matter what your metal problem, it will pay you to consult with General Plate. Their vast experience in cladding precious to base metals, or base to base metals can overcome your problems . . . often reduce costs.

Write for information about General Plate Composite Metals.

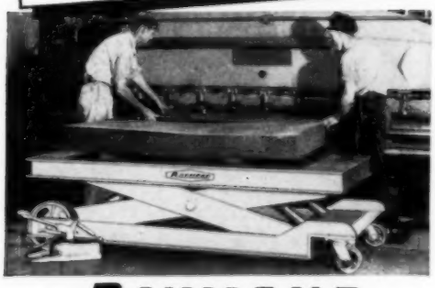
GENERAL PLATE

Division of Metals & Controls Corp.

711 Forest Street, Attleboro, Mass.

BREVITY—Identify by IEN - 11932 If you write the maker

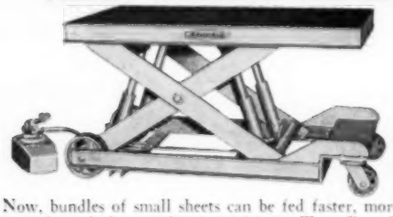
NEW WAY to FEED *Thick* BUNDLES of SHEETS



RAYMOND

Hydraulic Scissors-Type

SHEET FEEDING TABLE



Now, bundles of small sheets can be fed faster, more accurately with the new *Raymond* Scissors-Type Sheet Feeding Table.

Only 66" long, it has a scissors-type lifting mechanism that elevates the top from 18" to 36", enabling it to hold thick bundles for feeding. Top can't sag under off-center loads because it's supported at four points by Hydraulic rams.

With *Raymond* Scissors-Type Sheet Feeding Tables, manual lifting is banished — the operator merely slides sheets to presses, shears or brakes. Single speed foot pump or power operated pump raises table. Capacities: 6,000 or 10,000 lbs.

FREE BULLETIN. Send for Bulletin 261, Supp. 3—it gives complete details.

RAYMOND

Formerly LYON-Raymond Corporation

ELECTRIC INDUSTRIAL TRUCKS • HYDRAULIC ELEVATING EQUIPMENT

The RAYMOND CORPORATION

5555 SpaceMaker St., Greene, N. Y.

BREVITY—Identify by IEN - 11934 If you write the maker

GAGE . . Shadow projecting fixture produces guide lines on a work surface

Source: CARTER PRODUCTS CO.
57 Mount Vernon, N. W., Grand Rapids 4, Mich.

Smudgeproof lines

Rating has been increased from 500 to 1,000 watts in the lamp employed in the company's Guide Line Light, previously described IEN-5879-46. The unit mounts overhead to cast a black pencil-like shadow line on a work surface to serve as a guide, as in sawing. One to five lines can be shown at one time by positioning wires as required between the two bottom brackets. A new baffle makes it possible to control the width of the line. Operation is on a 110-volt 60-cycle ac. circuit.

The mounting bracket permits adjustment of the unit to project the lines as required. Overall dimensions are 30 by 12 by 36 inches. Two of the units can be set up to establish cross lines at 90 degrees for work location.

BREVITY—Identify by IEN - 11935 If you write the maker

PROTECTING . . Plastic coated glove is reversible, equally fits either hand

Source: WASHINGTON GLOVE CO.
104-8 N. Water St., Milwaukee 2, Wis.

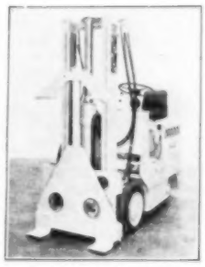
Non-slip finish easily laundered

Fabric material presenting a soft fleecy inner facing is plastic coated in construction of this new work glove. Feature of the glove is its reversibility in that it is made the same on both the front and back and can be switched from the right hand to the left hand to fit equally well in either position. Three styles include knit wrist, short gauntlet, full gauntlet. Colors are red, green, black, brown.

BREVITY—Identify by IEN - 11936 If you write the maker

TRUCK . . Clamp attachment grips load vertically, rates 1½ ton

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.



Particularly for storing

Boxes, crates and similar rigid loads are gripped for handling by this new hydraulic attachment for the company's 1½-ton electric truck. The clamp will grip and pick up two such load units measuring to 75 in. in height by 36 in. in width, each. It will stack them to 17 ft. in height. A hydraulic side shifter permits moving the clamp mechanism and its load to ¾ in. on either side of center to assist in spotting in narrow aisles and between previously stacked loads.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11937 If you write the maker

Simple • Accurate

GROUND RESISTANCE TESTING with

VIBROGROUND

- Push-Button Operation
- Direct-Reading
- Completely Self-Contained
- True readings, regardless of earth resistance and condition, stray frequencies, voltages or currents

YOU can be sure of safe, effective grounding of all types of electrical systems when you test with the light, easy-to-use Vibroground. Simple operation and built-in accuracy virtually eliminate reading errors. No leveling, cranking or outside power source is necessary; and direct readings are independent of auxiliary probe resistance.

Full data on Vibrogrounds, including testing techniques and illustrations, is yours for the asking.

Write for BULLETIN 105

ASSOCIATED RESEARCH, Incorporated

"Precision Instruments Since 1930"

3762 West Belmont Avenue • Chicago 18, Illinois

BREVITY—Identify by IEN - 11938 If you write the maker

Engrave . . . PANELS UP TO 25" WIDE IN YOUR OWN SHOP WITH THE *NEW* ENGRAVOGRAPH

Portable Model 1-S

The *only* portable machine which reproduces 15 sizes from one master alphabet.

The *only* one with *adjustable* copy holding slides for multiline engraving in one set-up.

Self-centering holding vise for nameplates.

Send for Booklets
I-S 23—portable model
H-23—heavy duty model

NEW HERMES, Inc. *new hermes* Engravo-graph

13-19 University Pl, N. Y. 3, N. Y.

CANADA: 359 St. James St., Montreal

World's Largest Manufacturer of Portable Engraving Machines

BREVITY—Identify by IEN - 11939 If you write the maker

"Blu-Mol" Hole Saws are part of the world's broadest and most highly developed line of metalcutting saws.

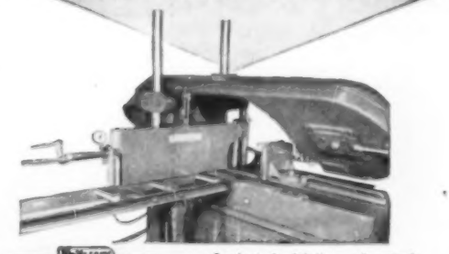
MILLERS FALLS TOOLS SINCE 1868 *The Mark of Superiority*

BREVITY—Identify by IEN - 11940 If you write the maker

For repetitive cutting . . . THIS COMBINATION SAVES TIME AND MONEY

ANY quantity of identical lengths of bar stock are cut automatically in a Wells No. 12 Heavy Duty Metal Cutting Band Saw equipped with a Wells-O-Bar Feed Master.

In operation, the cutting head of the saw descends at a rate governed by a predetermined blade pressure setting. At the completion of each cut, the head automatically rises to a preset height and the stock is automatically projected for the next cut. The machine requires no attention except for reloading. Ask your Wells Dealer for complete information or write direct.



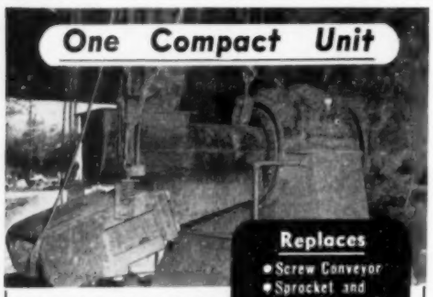
Wells

Products by Wells are Practical

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

BREVITY—Identify by IEN - 11941 If you write the maker



One Compact Unit

Syntron F-44 Tubular Feeder feeding to a ball mill in a cement plant. Not only reduced maintenance costs by eliminating items noted, but greatly increased efficiency of operation.

Replaces
- Screw Conveyor
- Sprocket and Chain Drive
- Countershaft
- Belt Drive
- Motor

SYNTRON

"Vibra-Flow"

VIBRATORY FEEDERS

With Variable Control of Rate of Flow

WILL HANDLE—most all types of bulk materials—from light, fine powders to heavy, coarse lumps—hot or cold—dry or damp. AT—variably controlled rates from pounds to hundreds of tons per hour. TO—mixers, screens, belts, crushers, blenders, driers, ovens, packaging machines, etc. Write To—

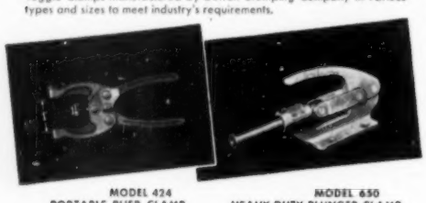
SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 11942 If you write the maker

If you have to HOLD

ANYTHING in your production operations

Hold EVERYTHING with "DE-STA-CO" Toggle Clamps in welding, riveting, bonding, machining and assembly. • Fast clamping, positive holding pressures, instantaneous release—Toggle Clamps speed up your operations and cut your costs. • There are more than 40 different Toggle Clamps manufactured by Detroit Stamping Company in various types and sizes to meet industry's requirements.



MODEL 424
PORTABLE PLIER CLAMP
For one-hand use in cramped work areas and small space. Deep jaw capacity but only 4½" in length.

MODEL 650
HEAVY DUTY PLUNGER CLAMP
For "push-pull" work-holding jobs where considerable pressure is needed. Compact; up to 4000 lbs. capacity.

MODEL 235-U RETRACTABLE CLAMP (Not illustrated)
Quick, unimpeded loading and unloading of fixtures easily possible with this one. Up to 750 lbs. pressure.

Ask for "DE-STA-CO" Toggle Clamp Catalog and name of representative nearest you who is stocking our entire line of Toggle Clamps.

DETROIT STAMPING COMPANY
342 MIDLAND AVE. • DETROIT 3, MICH.

BREVITY—Identify by IEN - 11943 If you write the maker

With a *Minute Man*® Keyway Broach Kit...

CUT YOURSELF A KEYWAY

as easy as carving a slice off the bird

DO IT QUICK — any width keyway from 1/16" to 1", in any bore from 1/4" to 5" in SIXTY SECONDS.

DO IT CHEAP — with the "Minute Man" Broach you cut keyways for as little as a penny apiece, instead of the dollars it takes on a big machine tool.

DO 'EM ALL — du Mont makes 21 standard sets; 25 standard sizes of broaches, 59 standard size bushings, and a wide range of special production type guideless broaches.

MAIL THIS COUPON FOR INFO AND PRICES

The du MONT CORPORATION, Greenfield, Mass.

Please mail descriptive folder and price list N on *Minute Man Keyway Broaches and Kits.*

Name .....

Company .....

Address .....

BREVITY—Identify by IEN - 11944 If you write the maker

DRIVE . . Variable pitch sheave, rides split tapered bushing on shaft

Source: V-BELT ENGINEERING CO.
P. O. Box 8513, Richmond, Va.

Interchangeable stock units

New design for certain of the larger sizes of the variable-pitch sheave, previously described IEN-6702-49, includes a split tapered bushing that applies between the sheave assembly and the shaft on which it is to be mounted. This arrangement permits quick removal and replacement of the sheave to meet changing drive requirements. Overall range of sheave sizes is from 4.4 to 15.2 in. in diameter.

Characteristic of the design is constant center dimension in axial direction independent of adjustment for pitch. Adjustment is made while the sheave is standing after loosening a set screw and turning the knurled ring at one end. Assemblies include 2, 3 and 4-groove units for A, B, C V-belts.

BREVITY—Identify by IEN - 11945 If you write the maker

EXTINGUISHING . . Liquid chemical for use in small hand extinguishers

Source: ESTON CHEMICALS INC.
3098-3100 E. 26th St., Los Angeles 23, Calif.

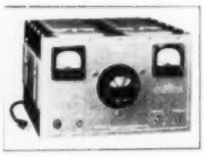
Technical data upon request

New fluid known as Chlorobromomethane is a fire-extinguishing liquid, originally developed in Germany, now available through the company. It is particularly suited to fight magnesium and electrical fires. It applies also as a fumigant, as a high-gravity liquid for flotation purposes, as a penetrant for paint removers. It should not be handled in aluminum or magnesium containers. Freezing point is at minus 65 deg. C.

BREVITY—Identify by IEN - 11946 If you write the maker

TESTING . . Electronic power supply rates 15 amp., 0 to 28 volt dc.

Source: ELECTRO PRODUCTS LABORATORIES INC.
4504-B N. Ravenswood Ave., Chicago 40, Ill.



Has a steel housing

Model N is a new continuously-variable dc. power supply for input from a 110-volt 60-cycle ac. line. It is intended to test and service electronic equipment, telephone circuits, laboratory instruments and for limited plating operations.

The assembly employs bridge-type selenium rectifiers for continuous duty at 15 amperes. A single control provides for continuous voltage adjustment to a maximum of 28 volts. The control operates a Superior Powerstat built into the housing. Voltmeter and ammeter are mounted on the housing face. Overall dimensions are about 15 by 15 by 10 inches.

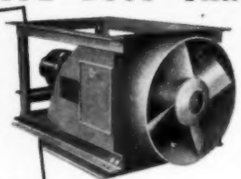
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11947 If you write the maker

Wing

ELBOW TYPE DUCT FANS

Delivers Large Air Volumes with Low Power Consumption



Complete range of sizes from 10 in. to 60 in.; and from 200 to 85,000 c.f.m.

The Wingfoil Axial Flow Duct Fan, in either elbow type or straight line type, is a compact, economical fan designed to operate against static pressure. The elbow type replaces an elbow in a run of duct, with the motor outside the housing, unaffected by hot or dirty air or gases. Belt or direct drive. Wingfoil "Non-overloading" fan wheel characteristics. Write for bulletin.

L. J. Wing Mfg. Co. 160 Vreeland Mills Road Linden, New Jersey

BREVITY—Identify by IEN - 11948 If you write the maker

ARMSTRONG *Carbide* TOOL HOLDERS

FOR HIGHER SPEEDS, AND HEAVIER FEEDS

ARMSTRONG Carbide Tool Holders and ARMIDE (Carbide Tipped) Cutters come in cased sets for tool rooms and maintenance departments, and individually in all sizes for general machine shop and production turning. They permit not only the ready machining of sand-filled castings, the hardest and toughest steels as well as many heretofore "unmachinable" materials, but also make practical much heavier cuts and cutting speeds up to 600 f.p.m. on ordinary work. They also run from 10 to 100 times as long between regrindings.

WRITE FOR CATALOG

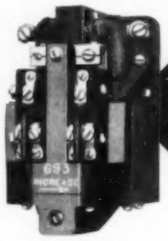
ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. ARMSTRONG AVENUE, CHICAGO 30, U. S. A.
NEW YORK • SAN FRANCISCO

BREVITY—Identify by IEN - 11949 If you write the maker

SPLIT-SECOND TIMING!

PNEUMATIC ELECTRONIC

Do you want accurate and dependable timers that are easy to adjust, take small space, and serve many industrial control timing needs? Try these time-tested and proved Cutler-Hammer Timers.



CUTLER-HAMMER BULLETIN 10337 A.C. PNEUMATIC TIMER

We designed this pneumatic timer to cover many of your industrial control timing needs. You can use it on machine tools, conveyors, automatic processing, etc. You will like its small size, 2¾ wide by 4⅞ high, especially where space is at a premium. You can adjust the timing with a screwdriver, from the front. 8 turns of the screw give the entire timing range, from 0.3 seconds to 60 seconds. Reset is practically instantaneous. You can get this timer with one or two timing steps. The two timing steps eliminate the need of one timing relay, and they are independently adjustable.

CUTLER-HAMMER BULLETIN 13522 GENERAL PURPOSE ELECTRONIC TIMER

When you need short or very accurate timing, use this electronic timer. If you want a wide timing range, from 0.15 seconds to 60 seconds, get the standard unit. If you want shorter time settings or narrower ranges for special uses, give us the particulars. The timing adjustment is made by turning the knob of the potentiometer rheostat which has a plainly marked graduated dial. You can mount the rheostat inside the timer case or any place on the machine away from the timer. We build these timers with a heavy duty industrial type relay in the timing circuit. You will like the extreme accuracy of the timer on repeat conditions and in varying air temperatures.

For further information on either timer, write CUTLER-HAMMER, Inc., 1378 St. Paul Avenue, Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

CUTLER-HAMMER
MOTOR CONTROL
C-H

BREVITY—Identify by IEN - 11951 If you write the maker

For Access Panel and Door Assemblies

QUICK-LOCK speeds up mounting and demounting detachable panels. A 90° turn locks and unlocks it in a jiffy. Flexible mounting and tapered stud makes it ideal for assembling curved sheets and insures a tight fit when locked. Stud is self-ejecting when unlocked. Minimum deflection is assured—only initial loads are carried by the helical spring. Solid supports take up increased loads.

Call in a Simmons Engineer and compare QUICK-LOCK's economy with your present fastening method.

SIMMONS FASTENERS

SPRING-LOCK • QUICK-LOCK • AUTO-LOCK

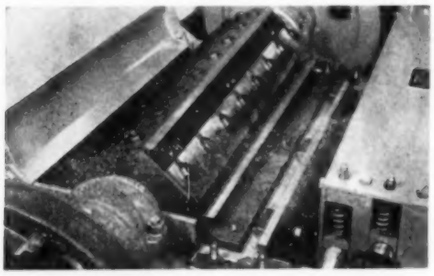
SIMMONS FASTENER CORP., 1758 N. BROADWAY, ALBANY, N. Y.

BREVITY—Identify by IEN - 11952 If you write the maker

CUT HANDLING COSTS *with* TAYLOR-STILES CUTTERS

Crude materials, such as plastics for molding, green and chrome stocks for glue, rags in paper making, rubber waste for reclaiming, thread waste for textiles and plastics, etc. come to plants in forms that must be reduced in size for efficient processing.

Let us tell you how important industrial concerns use our precision and production cutters to improve many processes and make substantial savings in time, handling, and other operating costs.



TAYLOR-STILES Company
CUTTING MACHINES & KNIVES

Our experienced engineers are at your service to solve your cutting problems.

44 Bridge Street
Riegelsville, New Jersey

BREVITY—Identify by IEN - 11953 If you write the maker

REVOLUTIONARY NEW SYNTHETIC METAL APPLIED WITH PUTTY KNIFE HARDENS IN MINUTES . . .

MIRACLE "No Torch" Trade Mark Reg.

Cold SOLDER

No Heat, No Flame! Miracle COLD SOLDER adheres to all metals including aluminum, and dries to solid metal in minutes.

Ideal, easy filler for pits, blowholes, fractures and other imperfections in ALL castings. Excellent for wood and metal patterns. Invaluable for filling defects, gouges in all kinds of metal fabrication.

It is used most successfully by all industries requiring a WATERPROOF FILLER that will NOT SHRINK, CRACK, CHIP or PEEL.

REGULAR USERS OF Miracle no-torch Cold Solder:

Brown and Sharpe
Chicago Pneumatic Tool
Link-Belt
Jenkins Valves
Hercules Powder Co.
Neil Equipment Co.
Hood Rubber
New Holland Machine Division of Sperry Corp.
Bundy Engineering Corp.
Fairbanks Co.
The Butler Co.
Talladega Foundry & Machine Company
Wheeling Steel Corp.
Golden's Foundry
Universal Winding Co.
Strickland Pattern Wks.
Harvard University
Mass. Inst. Tech.

Complete Satisfaction, or MONEY BACK!
3 lb. can $4.95
F.O.B. New York

Distributed Solely By A. L. Okun Company

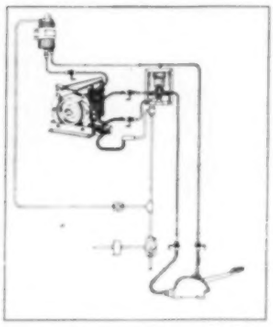
Miracle Cold Solder

148 B-26 58th Ave. • Flushing, New York, N. Y.

BREVITY—Identify by IEN - 11954 If you write the maker

CRANE BRAKE . . For travel motor, provides service and emergency control

Source: WAGNER ELECTRIC CORP.
6414 Plymouth Ave., St. Louis 14, Mo.



Prevents unintended movement

New design of the company's hydraulic combination service and parking brake for a crane travel motor, previously described IEN-12978-45, provides foot-controlled hydraulic braking. The control includes service stops and load spotting, automatic spring-set braking for parking and to bring the crane to a gradual stop in the event of power failure or upon movement beyond certain limits on a runway. The new assembly signals the operator when the parking brake is released. Changes in fluid pressure because of temperature variation will not affect operation. The design is available in brake assemblies measuring 10 by 4 in., 14 by 6 in. and 18 by 8 inches. Brakes of this size, now in service in the previous design, can be converted by sending in the releasing cylinders and control boxes for rebuilding.

To release the parking brake the operator first closes the main line switch. He then operates a control-cylinder foot pedal to compress the brake setting spring which is mounted on the releasing cylinder. After this spring is compressed a limit switch, now mounted on the releasing cylinder, is tripped mechanically to close the electric circuit, energize the magnetic check valve in the control unit and actuate the signal light in the push-button station at the operator's position. The check valve traps the fluid under pressure in the releasing cylinder and holds the parking brake setting spring compressed as long as the magnetic check valve is energized. After the parking brake is thus released, the service brake can be applied by its hydraulic actuating cylinder each time pressure is exerted on the foot pedal.

To park the crane the operator presses the push button which opens the electric control circuit to de-energize the magnetic check valve. This permits escape of the fluid trapped in the releasing cylinder and results in setting the parking brake by spring action. At the same time the signal light at the operator's position goes out to indicate that the brake is applied. The same action takes place if the operator opens the main-line switch, as he does when he is taking a crane out of operation, or in the event of power failure or trip action of a limit switch on the runway.

BREVITY—Identify by IEN - 11955 If you write the maker

HEAT TREATING . . Series of data bulletins describes specific examples on heat treating parts

Ipsen Indutries Inc.
713-17 S. Main St., Rockford, Ill.

"Ipsenlab" titles new series of data sheets issued every other month to keep you posted on applications of the company's heat-treating and quenching unit. The first two describe a specific part each with production figures and test results. The company will be happy to add your name to the mailing list upon request if you are interested in heat-treating methods.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11956 If you write the maker

THORO-CLEANING of electric motor housings, parts and assemblies is handled more efficiently and economically with this custom-built A-F Cleaning Machine. It washes and rinses with Super-Spray—and dries by means of high-pressure air blow-off. Many other features. If one of our "standard" machines will not solve your metal parts and products cleaning problem, remember A-F specializes in custom-built cleaning and finishing equipment. Write today.

THE ALVEY-FERGUSON CO.
340 Disney Street • CINCINNATI 9, OHIO

CONVEYING EQUIPMENT
Alvey-Ferguson
WASHING MACHINES FOR INDUSTRY

BREVITY—Identify by IEN - 11957 If you write the maker

Fast Renewal of links with G-E ferrule-type fuse. Only three parts to handle. Simply insert link and screw on cap. Ratings: 250 v and 600 v—3 to 60 amp.

No Juggling with G-E knife-blade-type. Just loosen screws—they can't fall out—slip link into place. Insert fiber bar support and screw on cap. Ratings: 250 v and 600 v—70 to 600 amp.

SAVE TIME WITH G-E TIME-DELAY RENEWABLE FUSES

They're easy to handle—fully dependable. Ask your G-E distributor for a supply—available in all commonly used sizes.

Section D80-1142, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

GENERAL ELECTRIC

BREVITY—Identify by IEN - 11958 If you write the maker

Make STANLEY your hinge source!

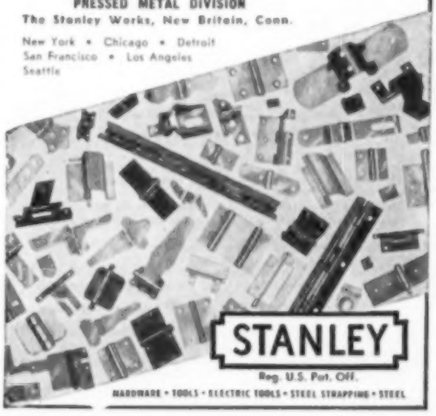
You just specify the hinge you want—Stanley does the rest, from first sketch to finished product.

Stanley gives you the advantage of expert designers and production engineers—complete research and tool-making facilities—the particular plating and finish best suited to your needs.

As the world's largest producer of hinges, Stanley is geared for efficient production to meet your requirements. Write for full information—not only on special hinges but drawings and stampings as well—now!

PRESSED METAL DIVISION
The Stanley Works, New Britain, Conn.

New York • Chicago • Detroit
San Francisco • Los Angeles
Seattle



BREVITY—Identify by IEN - 11959 If you write the maker

The Answer is often:

USE

SHAF-TITE* ROLLS

Many Patented Constructions

Choice of

METAL, RUBBER, or WOOD ROLLS

Send For NEW ROLL CATALOG No. 48

INDUSTRIAL ROLL DIVISION

RODNEY HUNT MACHINE CO.

873 Main Street • Orange, Mass., U.S.A.

*Reg. U.S. Pat. Off.

BREVITY—Identify by IEN - 11960 If you write the maker

YOU CAN TAKE IT WITH YOU!

BECKER
Self-Contained
SPRAY GUN
PRESSURE-POWERED
with
INEXPENSIVE
CO2
CARTRIDGE

This completely portable spray gun is saving money in many industrial uses. Excellent for maintenance operations. Requires no compressor, motor, or electrical outlet. Has 21 liquid ounce capacity, heavy-gauge, steel container; cast aluminum head; brass and stainless steel inserts. Low cost CO2 cartridge sprays up to one container full, depending on viscosity. Use it for paint, varnish, enamel, oil, fire-proofing, rust-proofing, disinfecting. If your industrial distributor can't supply you, order direct and we will ship postpaid. (Extra CO2 cartridges 10 for $1, postpaid, or buy them from your local dealer.)

ONLY $15.95 with three cartridges

SULLIVAN BECKER CO., Dept. 191-L, Kenosha, Wis.

BREVITY—Identify by IEN - 11961 If you write the maker

THIS Solid Carbide Boring Tool is what you need for precision BORING of DEEP, SMALL HOLES

This Bokum tool provides a practical way to bore to greater depths in ratio to diameter. Finish bore often in one pass. More rigidity permits higher speeds without chatter. Send for Catalog 948.

Come to Bokum with your BORING PROBLEMS

Bokum high-speed steel tools for general boring and threading are distinguished by their helical backed off form, which produces a smooth, clean, precision bore. Ask for Cat. 1139-6.

Carbide-tipped boring and internal threading tools. Cat. 398

All Bokum tools available in sets in assortments of your own choice. Cat. Supl. No. 1139-6.

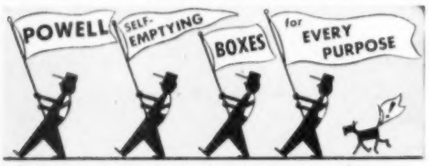
Tool Holders for holding Bokum Boring Tools in lathes and turret lathes. Cat. 483

Resharpening fixtures to prolong the long life of Bokum Boring Tools

For small tools Nos. 00000 to 3. Cat. AB-1. For large tools Nos. 4 to 12. Cat. AB-4-12.

BOKUM TOOL CO.
SINGLE POINT BORING TOOLS—INTERNAL THREADING, BOTTOMING AND FACING TOOLS—CARBIDE TIPPED TOOLS
DEPT. N • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

BREVITY—Identify by IEN - 11962 If you write the maker



POWELL All Steel Job-Designed Dump Boxes or Roll-Overs Cut Handling 40-50%

If your product lends itself to mass handling a system of roll over or dump style boxes will cut your costs as much as 50 percent.

Powell makes a complete line of standard and Job-Designed roll over and dump boxes. For further data or estimates contact your nearest Powell representative or write direct.

Faster delivery of your materials handling needs is assured if you can furnish either a government D. O. number or the steel.

Send inquiries to Dept. 6111

POWELL PRESSED STEEL

THE POWELL PRESSED STEEL CO. • Hubbard, Ohio
ORIGINATORS OF COLD FORMED ALL STEEL HANDLING EQUIPMENT
In Greater Youngstown

BREVITY—Identify by IEN - 11963 If you write the maker

FASTENING . . Expansion sleeve and bolt anchors planking to structure

Source: SQUARE TOOL & DIE CO.
1548-52 No. Fremont St., Chicago 22, Ill.

Name size for sample

Access is required to only one side of the work with this new Sleeve Bolt to anchor planking to a structure as in the railroad car floor illustrated. Holes are drilled equal to the body diameter of the sleeve through the plank and metal structure and the sleeve, with the bolt entered into it, is driven down to required anchoring position. Then the bolt is threaded through the sleeve to expand the fingers at the end and complete the assembly.

The steel sleeve is split longitudinally toward the center from its two ends and is flared at the end into which the bolt is entered. It is threaded in the body as far as the fingers at the opposite end. The plain end of the bolt expands it.

Sizes range from ¼ to 1 in. in sleeve diameter with sleeve lengths starting at 1 inch. The bolt can be specified with hexagon, flat, round, square and slotted heads. At present the fastening is available in specified sizes and quantities.

BREVITY—Identify by IEN - 11964 If you write the maker

PRINTING . . Sensitized paper to directly produce positive photocopy

Source: REMINGTON RAND INC.
315 Fourth Ave., Room 1618, New York 10, N. Y.

Normal processing follows exposure

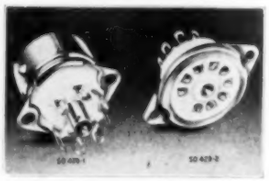
Type G-151 designates a new direct-positive Portagraph paper for use in making readable positives from one-sided translucent or transparent originals as well as by reverse and reflex copying methods. It will produce a positive photocopy in one step by transmitted or reflected light. It applies in the company's Portagraph and other standard photocopying equipment. The sensitized surface is color sensitive so colored stocks, inks and stamps will reproduce.

In contact printing from a letter, as an example, the letter is placed face down on the copy glass and the paper is placed over it with the emulsion side down. Then the exposure is made. The paper is available in a range of cut sizes from 8 by 10 in. to 24 by 36 inches. It also can be supplied in special sizes in packages of 500 sheets and in rolls measuring 60 ft. in length with width ranging from 8½ to 42 inches.

BREVITY—Identify by IEN - 11965 If you write the maker

CONNECTOR . . Teflon tube socket, 7 and 9 pin miniature units available

Source: UNITED STATES GASKET CO.
658 No. 10th St., Camden 1, N. J.



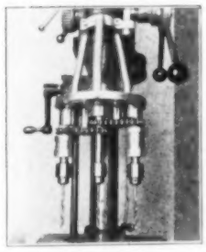
Chemically inert material

Teflon is employed in the body of this new miniature Chemelec electronic tube socket because of its ability to withstand mechanical shock, vibration, thermal shock and attack by corrosive atmospheres. Dielectric constant is 2.0 in a range between 60 cycles and 30,000 megacycles. The unit is serviceable in a temperature range between minus 150 and plus 575 deg. F. with negligible change in critical characteristics.

BREVITY—Identify by IEN - 11966 If you write the maker

DRILLING . . Multiple spindle head mounts three adjusting ¼ in. spindles

Source: SILVER KING CORP.
620-24 Diversey Parkway, Chicago 14, Ill.



List is $98.50

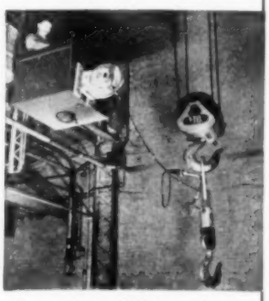
Center spindle of this new head connects direct to a chuck in the spindle of a drilling machine. It is connected, in turn, by chains to two outboard spindles. They clamp in curved slots in a plate that also carries the center spindle. Two idler sprockets ride between the outer spindles and the center one to take up slack in the chains as required. Centers are adjustable between 1⅝ and 5⅝ inches. Each spindle is equipped with a ¼-in. Jacobs chuck. The complete assembly has a cylindrical guard that encloses the driving chain.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11967 If you write the maker

The New Ametron Electronic Scale weighs by *electronics*

- ELECTRIC LOAD CELLS
- REMOTE INDICATION
- PRINTING RECORDERS
- LOW MAINTENANCE



Write for illustrated circular "The Way to Weigh"

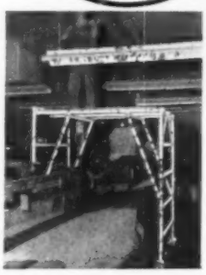
Picture shows 10,000 pounds capacity crane electronic scale used in shipping department of Harnischefeger Corporation, West Allis, Wisconsin.

STREETER-AMET COMPANY
4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

BREVITY—Identify by IEN - 11968 If you write the maker

SAVE up to 70% with Aluminum Alloy "UP-RIGHT" SCAFFOLDS

NEW, FASTER, SAFER WAY TO GET UP IN THE AIR & ROLL WITH THE JOB



30' Mobile TOWER SCAFFOLD
which took only 10 minutes to erect. A tower of any other height desired can be erected by using the required number of standard 6' or shorter sections. Each one-piece section is easily handled by one man.

Mobile 6', 8' or 10' SPAN SCAFFOLDS
"The only way to get over looms and spinning frames," reports textile plant manager. Ideal for narrow aisles and cluttered areas in any factory.

ROLL-AROUND and SAFETY CAGE
Provides new, faster method for covering entire wall areas of tanks. Can be rigged by one man. Roll-Around is anchored to eye-bolt on top of tank. Safety cage is raised or lowered while rolling around.

WRITE FOR DESCRIPTIVE CIRCULAR

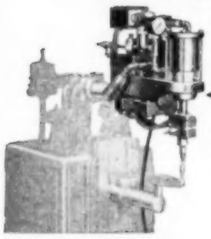
"UPRIGHT" SCAFFOLDS
DEPT. 142 • 1013 PARDEE ST. • BERKELEY, CALIF.
FACTORIES: BERKELEY, CALIF. • TETERBORO, N. J.

• OFFICES IN ALL PRINCIPAL CITIES •

BREVITY—Identify by IEN-11970 If you write the maker

Solve Your Welding Problems at HOFFMAN-CHICAGO

Spot, Butt, Seam, Gun, Flash, Projection, Multi-Point and Stud Welders



NEW . . . USED . . . REBUILT

WELD-AIR-MATIC

Spot welder air conversion unit. Tests prove 10,000 welds hourly on continuous daily schedules.

BUTT-ON-SPOT

Automatic butt welding attachment. Water-cooled, fits any spot welder with minimum horn clearance of 7".

DIES: complete facilities to design and build special welding dies and fixtures for your piece parts.

ACCESSORIES: complete stock of Welder Controls, Holders, Tips and Bar Stock.

Write for our current available Welder List.

ROBT. W. HOFFMAN COMPANY, INC.
42 South Clinton Street • Chicago 6, Illinois

BREVITY—Identify by IEN-11971 If you write the maker

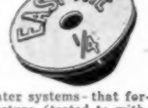
LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $1013 @ $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:
$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. "EASY-TITE" Faucet washers



...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and without obligation.

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-111.
2505-05 Third Avenue, New York 51.

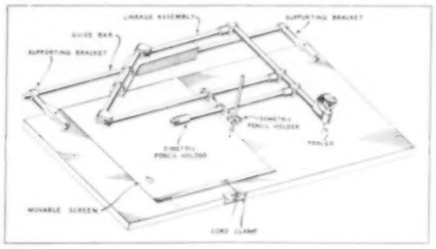
SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN-11973 If you write the maker

DRAFTING . . Tracer linkage turns drawing into isometric projection

Source: INDAMER CORP.
11 W. 42nd St., Room 2936, New York 18, N. Y.



Shade movement sets elevations

Vibax trade names new drafting machine consisting of a linkage assembly that mounts on a slide bar at the rear of a drafting table. It positions a tracer to the right and two pencil-holders to the left. The pencil holders ride above a roller shade that pulls to the front of the drafting board from a roller mounted beneath the board at the rear. It is secured at the front by a cord clamp. A guide line on the board from front to back is visible through an opening in the shade.

A plan view is set up at a 45-deg. angle by taping it on the drafting board to the right of the shade. A blank sheet of drafting paper is taped to the shade. Dimension points are positioned on the drafting board to the left of the shade in connection with a guide line on the edge of the shade to represent the elevations of horizontal planes marked by shoulders, recesses or levels in the plan view.

The shade is positioned at first one elevation and then another and the corresponding horizontal lines are executed by moving the tracer over the plan view. The drawing is completed by joining these planes with the necessary vertical lines. Any curved surfaces in a vertical plan are drawn by establishing points from the plan drawing on selected elevations and then by connecting these points to complete the work.

BREVITY—Identify by IEN-11974 If you write the maker

CLEANING . . Portable vacuum machine for wet or dry operation, 1 hp. motor

Source: CLARKE SANDING MACHINE CO.
9-13 Clay Ave., Muskegon, Mich.

It's fast and quiet

Model WD-23 is a new unit in the company's line of vacuum-cleaning equipment in which a 1-hp. rubber-mounted universal motor, for operation on 110-volt ac. or dc., drives a multiple-stage blower. The blower creates suction equivalent to a closed water lift of 63 inches.

The machine employs a porcelain-enameled 17-in. steel tank holding 15 gal. of water and dirt or an equivalent amount of dry refuse. A positive shut-off device warns the operator when the tank is filled to capacity. A dump valve on the side of the tank at the bottom provides for quick draining. When the machine is employed dry, a self-cleaning bag deposits dirt and litter in the lower section of the tank. Assembly is on 4-in. ball-bearing swivel casters. A rubber bumper surrounds the base. Weight is 85 pounds.

BREVITY—Identify by IEN-11975 If you write the maker

VISE . . Hand screw design, triangular, round, square jaw faces

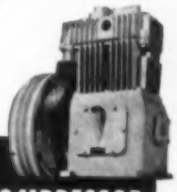
Source: DeWILDE-JONES INC.
179-83 Steuart St., San Francisco 5, Calif.

It's all in the jaw design

Work pieces that are square, round, curved, angular or irregular in outline can all be held securely between the jaws of this new Sevo hand-operated screw-type vise. It is manufactured in Sweden for distribution by the company in the United States. The removable jaw carries a set of triangular plates with flat base and sides and rounded apex. The stationary jaw carries two sets of individually swiveled plates, square on the face and sides and circular on the opposite end. These three sets of jaws can be positioned to grip and securely hold any object that can apply in a maximum jaw opening of either 2½ or 5 in., the two sizes in which the vise is available.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-11976 If you write the maker



Select the RIGHT AIR COMPRESSOR For The Job

For maximum production and efficiency, it pays to have the right air compressor for the right job. The proper size and type air compressor is available from the complete line of Quincy Compressors, ranging in sizes from 1 to 90 c.f.m. Quincy manufactures a complete line of both air and water cooled units in a variety of mountings. Write today for details and latest prices. Quincy Compressor Co., Dept. H-21, Quincy, Illinois.

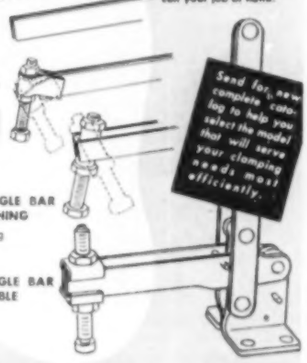
Quincy compressors
QUINCY COMPRESSOR CO. Quincy, Illinois
Branch Offices: New York • Philadelphia • Chicago St. Louis • Dallas • San Francisco

BREVITY—Identify by IEN-11977 If you write the maker

KNU-VISE CLAMPS PROVIDE UNUSUAL VERSATILITY

What goes on here!

Toggle bars can be made adaptable for diverse applications—plain or with various end treatments to suit your job at hand.



Sales Offices in Principal Cities

KNU-VISE PRODUCTS LAPEER MFG. CO.
3060 DAVISON ROAD • LAPEER, MICHIGAN
Western Division • 422 Magnolia Street, Glendale, California

BREVITY—Identify by IEN-11978 If you write the maker

Another Automatic Achievement
CLEVELAND tapping machines lead screw

A CLEVELAND TAPPER set up on a munitions job, tapping a 1 15/32", 16-pitch Buttress thread in SAE 4143 steel tubing hardened to 35 to 37 Rockwell.

CLEVELANDS in the Defense Program

Watch a Cleveland Tapping Machine in action for a few minutes . . . tapping two 20 mm. shells every 6.1 seconds . . . turning out 3.5 rocket bodies at the rate of 100 pieces per hour . . . and you get the idea that the front line of democracy is a lot closer than you think. *We cannot afford to waste a man hour which could be more effectively spent for defense production.* Cleveland engineers design and build ingenious machines which not only combine several operations but also tap groups of holes at one stroke of the machine. *Cleveland Tappers save valuable working time and cut production costs.* Find out about them.

Meet Mr. Lead Screw...

of The Cleveland Tapping Machine Co. Mr. Lead Screw symbolizes the time-proved lead screw feed designed and pioneered by Cleveland . . . now generally accepted as the key to precision tapping at high speeds. Write for your copy of the Cleveland Production Tapping Guide and a copy of Catalog Y-8.

THE CLEVELAND TAPPING MACHINE CO.
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC.
CANTON 8, OHIO

BREVITY—Identify by IEN - 11979 If you write the maker

PERMANENT PROTECTION

For IDENTIFICATION CARDS

STUDEBAKER "PLASTICOTE" PRESS

Puts on a permanent plastic finish. Permanently seals, moisture and tamper-proofs all types of cards, photographs, etc. Easy to operate. Plugs into 110 Volt outlet. Cost of material for processing cards less than 3¢ each. Will process about 60 cards per hour. Proven in actual operation in many plants. Write for Bulletin No. 78.

MODEL 120

A New bulletin No. 140 on Studebaker Hydraulic Production Equipment is available. Write for copy.

Studebaker MACHINE COMPANY

1235 S. 9th Avenue Maywood, Ill.

BREVITY—Identify by IEN - 11980 If you write the maker

USE PANNIER "MASTER MARKER"

Nicked and Notched

METAL SAFETY TAGS for Positive Identification and safe, efficient handling

Materials and tools are efficiently separated, stock bins easily marked and shipping legibly identified when you use Pannier SAFETY TAGS. Durable, easily attached, and proof against defacing, these tags are supplied blank or with company name; are available in individual units or coiled lengths, and in tin, copper, brass, aluminum, steel, stainless steel and other metals .014" thick or lighter. Coiled tags are nicked for easy separation, and notched for proper feeding into Pannier or other embossing machines; are available with slots or holes as desired.

FREE DATA! Ask for Bulletin D-10, giving full information about Pannier SAFETY TAGS and Embossing Equipment.

OFFICES: Chicago • Los Angeles • Youngstown • Philadelphia • Jacksonville

THE PANNIER CORPORATION

101 Pannier Building, Pittsburgh 12, Pa.

BREVITY—Identify by IEN - 11981 If you write the maker

DOUBLE-ACTION AIR CYLINDERS

Mounting	Bore				
Horizontal	1½"	2¼"	3"	4"	5"
Vertical	1½"	2¼"	3"	4"	5"
Face	1½"	2¼"	3"	4"	5"
Swivel	1½"	2¼"	3"	4"	5"

Length of stroke optional

The new Mead Air Power Catalog shows the full line of single and double-acting cylinders, and air-operated Presses, Vises, Chucks, Hammers, Work Feeders — for Faster, money-saving production. Write today!

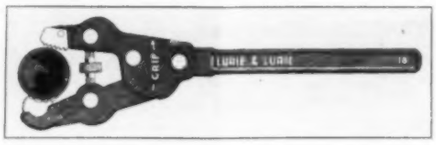
MEAD SPECIALTIES COMPANY

4114 NO. KNOX AVE., DEPT. 8-111-A, CHICAGO 41, ILL.

BREVITY—Identify by IEN - 11982 If you write the maker

WRENCH . . Adjustable design can be set for ¾ to 2½ in. pipe

Source: LURIE & LURIE
126-128 No. Union St., Chicago 6, Ill.



List price is $13.50

New wrench grips to turn a pipe in one direction, releases for reverse movement around the pipe to set up a new grip position. It is adjustable by turning a right and left-hand threaded screw to set the jaws correctly for any size pipe between ¾ and 2½ inch. The wrench is an 18-in. unit. The jaws are replaceable after knocking out drive pins that hold them in position in the wrench body.

BREVITY—Identify by IEN - 11983 If you write the maker

SAWING . . Band saw blade for high speed friction sawing in metal

Source: DoALL CO.
252-56 No. Laurel Ave., Des Plaines, Ill.

Company also can supply the machine

New blade, for friction sawing at blade speeds to 15,000 fpm. on a band-saw machine, is now available from the company. Three widths are between ½ and 1 inch. Length is in 500-ft. coils or in welded units to specification. The blade is particularly suited for work measuring 1 in. in thickness or less. It can be fed at the rate of 1,200 ipm. through 1/32-in. stainless steel. The high velocity creates friction between the blade edge and the work so the metal just ahead of the blade becomes plastic and can be removed by the 10 or 14 teeth per inch of blade length.

BREVITY—Identify by IEN - 11984 If you write the maker

RETRIEVING . . Spring operated reel carries 15 ft. of ¼ in. air hose

Source: WAYNE PUMP CO.
531 Tecumseh St., Fort Wayne 4, Ind.

Supports air tool

Pneumatic tools weighing 5 lb. or less are connected to the fitting at the end of the 15-ft. hose in this new spring-operated retriever so they can be raised and lowered over a work surface. A rubber bumper stop can be adjusted along the hose to limit the travel as required. A universal bracket permits mounting on post, wall or in suspension from overhead. Overall dimensions are 7¼ in. front to back, 9¼ in. in width and about 10½ in. in height in the assembly shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11985 If you write the maker

What Do You Need?

IF YOU DON'T FIND THE PRODUCT YOU NEED AMONGST THE MORE THAN 1200 DESCRIBED IN THIS ISSUE . . . PHONE, WIRE OR WRITE OUR READER SERVICE DEPARTMENT

Industrial Equipment News maintains the most complete reference file of product sources available anywhere . . . based on its own records of 15 years of product reporting and greatly augmented by its affiliation with Thomas' Register of American Manufacturers.

WHO MAKES IT WHERE TO BUY IT . . . ASK IEN

READER SERVICE DEPARTMENT

INDUSTRIAL EQUIPMENT NEWS

THOMAS PUBLISHING COMPANY
461 EIGHTH AVENUE NEW YORK 1, N. Y.

BREVITY—Identify by IEN - 11986 If you write the maker

SELF-LUBRICATING Powdered Bronze Bearings To Your Designs

DUCTILOY powdered-bronze bearings are serving by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

Use is indicated wherever it is desired to provide bearings that will require virtually no lubrication or service attention — bearings accurate within thousandths, ready to drop or press into position — bearings for radial load or thrust or both, to intricate design if necessary.

May we quote to your prints
There's no obligation

NATIONAL MOLDED PRODUCTS, INC.

Manufacturers of
SINTRLOY • DUCTILOY • TUBELOY BEARINGS
1945 Mill Street St. Mary's, Pa.

BREVITY—Identify by IEN - 11987 If you write the maker

HOW TO GET MORE WORK from ALL HANDS

SIMONDS LINEMASTER FOOT TREADLE SWITCH

7" long, 4" wide, 2¼" deep—Weighs only 5¼ lbs.

LINEMASTER puts feet to work when hands are busy! Compact switch operates with light pressure from foot—or knee, if mounted on bench or side of wall. Increases production by allowing full use of both hands. Prevents accidents to fingers. Sturdy cast iron housing, black crackle enamel finish. Simonds LINEMASTER offers low first cost, and years of trouble-free operation.

WRITE FOR BULLETIN AND PRICES

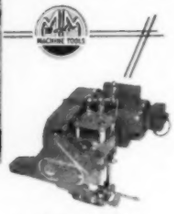
Let us quote on your special switch requirements

SIMONDS MACHINE CO., INC. 50 SAXON ROAD SOUTHBRIDGE, MASS.

BREVITY—Identify by IEN - 11988 If you write the maker

master MILLING • GRINDING • KEYSEATING ATTACHMENTS

INTERNAL KEYWAY CUTTING WITH MASTER SLOTTING HEAD ON A LATHE



Master Universal Slotting and Keyseating Head

THREE SIZES

Model "C," ½ h. p., 9" to 13" lathes
Model "B," ½ or ¾ h. p., 13" to 18" lathes
Model "M," 1 or 1½ h. p., 18" to 72" lathes

The multi-purpose Master milling, grinding and keyseating attachments increase the facilities and capacity of your lathes, turrets, or mills, in maintenance shops, tool rooms, as well as production shops. For the cost of one single purpose machine you can have several Master units producing on your present equipment.

1½ H.P. MODEL "M" ON LATHE MILLING ½" KEYWAY 1 FT. PER MINUTE

WRITE FOR TWENTY-FOUR PAGE CATALOG

MASTER MANUFACTURING CO.
1306 EAST AVENUE A • HUTCHINSON, KANSAS, U. S. A.

BREVITY—Identify by IEN - 11989 If you write the maker

PRESS-RITE

AIRFLEX
AIR FRICTION
CLUTCH

MAKING
POWER PRESS
HISTORY!

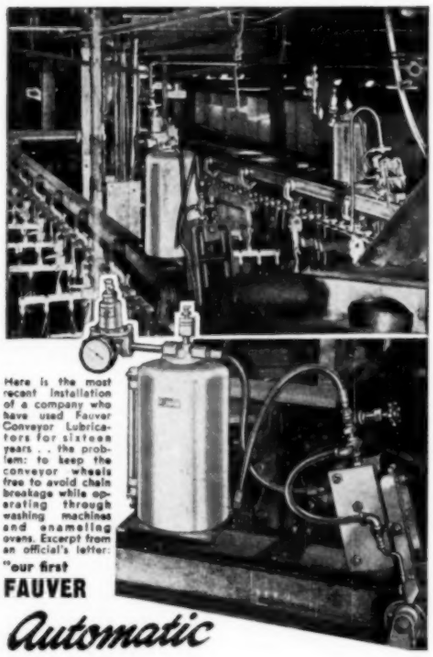
It's the greatest air clutch ever built into a punch press! Incorporated in this new Press-Rite Airflex Clutch is an airflex unit—a proven feature of many years. Hundreds of press users report little or no maintenance cost.

- No adjustment for wear
- Air and spring safety brake
- Air pressure regulated to suit your work
- No worry about excess heat

Optional equipment for all Press-Rite Presses, 20 to 85 ton capacity, the new clutch is the latest of many job-proven Press-Rite features. Get full details, TODAY!

Sales Service Machine Tool Co.
2365 UNIVERSITY AVENUE
ST. PAUL 14, MINNESOTA

BREVITY—Identify by IEN - 11990 If you write the maker



Here is the most recent installation of a company who have used Fauver Conveyor Lubricators for sixteen years . . . the problem: to keep the conveyor wheels free to avoid chain breakage while operating through washing machines and enameling ovens. Excerpt from an official's letter:

"our first
FAUVER
Automatic

CONVEYOR LUBRICATOR
was installed in 1934" . . .

"the conveyor is 3700 feet long and goes through enamel ovens, so lubrication was a serious problem. Several types of lubricators were tried without success. We resorted to manual application of oil which was an expensive item. This was necessary because when a sufficient number of wheels froze, the chain would break, meaning a cessation of production . . . This Automatic Trolley Lubricator now keeps the wheels well oiled, the oil is applied in a mist so that it does not get on the enameled work and those former mechanical troubles are eliminated" . . . there are

also FAUVER AUTOMATIC GREASE Lubricators driven by contact with the trolley wheels; operates on wheels equipped with or without Grease fittings—we specialize in conveyor lubrication problems—send for complete information

J. N. FAUVER COMPANY, INC.
47 W. Hancock DETROIT 1.

BREVITY—Identify by IEN - 11992 If you write the maker

SWITCH . . Sensitive snap acting, plastic housing, 5 amp. on 110 volt dc.

Source: MICRO SWITCH
30 E. Spring St., Freeport, Ill.

Single-pole, double-throw design

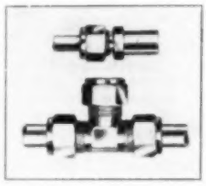
Magnetic blow-out included in the construction of this new Type-MT switch permits application of the unit in dc. circuits. The blow-out eliminates dc. arcing action that would otherwise ruin the contacts. The assembly is in a plastic housing measuring 2 by ¾ by ⅞ inch. Weight is about one ounce.

Three operator designs include a pin plunger, a leaf actuator and a roller-leaf actuator as shown in the illustration. Operating force is 10 to 15 oz. based on the pin-plunger design. Release force for this same unit is 5 oz. minimum and pretravel is 0.035 in. maximum. Overall travel and movement differential are both 0.005 inch.

BREVITY—Identify by IEN - 11993 If you write the maker

TUBE FITTING . . Tee and reducer to clamp on tubes, ⅛ to ⅞ inch

Source: CRAWFORD FITTING CO.
882-86 E. 140th St., Cleveland 10, Ohio



No tube preparation

A new **tee** and a new reducer fitting have been added to the company's Swagelok line of tube fittings, previously described IEN-11308-49. Each employs a threaded chuck inside the nut to clinch tight around the tubing wall and provide a tight seal. The fittings are available in aluminum, brass, Monel Metal, steel, stainless steel, in sizes ranging from ⅛ to ⅞ in. for application on heavy or thin-wall tubing in both metal and plastic types within the sizes named.

BREVITY—Identify by IEN - 11994 If you write the maker

WINCH . . Tractor attachment rates to 7,000 lb. on single line pull

Source: HYSTER CO.
2916 N. E. Clackamas St., Portland 8, Ore.

Hydraulic controls

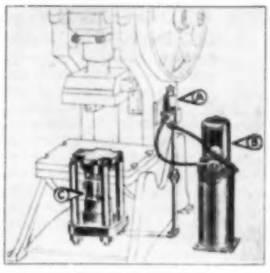
HySpeed D4 is a new attachment winch for application on Caterpillar D4 tractors for service, maintenance and general utility. The unit can be employed to lift, pull, drive light piles, ground-skid logs, build bundles of pulp logs. It is free spooling to permit fast line payout. Its friction-driven clutch provides positive line control. Line speed is to 515 fpm. with a full drum, 225 fpm. with a bare winch drum.

The drum barrel measures 6½ in. in diameter by 5¾ in. in length. Flange diameter is 16¼ inches. Maximum length of ½-in. line is 335 feet.

BREVITY—Identify by IEN - 11995 If you write the maker

PRESS TOOLS . . Die cushion provides overload release action

Source: DAYTON ROGERS MFG. CO.
2822-26 13th Ave. S, Minneapolis 7, Minn.



Ratings to 200 ton

Press Bed Jack is a new assembly similar to a die cushion for application beneath the bed of a press to move downward in the event of overloading beyond a predetermined pressure. The unit employs hydraulic fluid in its cylinder under pressure established by a pneumatic pump similar to that developed for the hydraulic overload-release Pitman, previously described IEN-10561-48. Construction is to specification for a given make and size of press.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 11996 If you write the maker

Will You Have Enough GAS this Winter?

THIS OVEN DESIGNED FOR GAS . . .
BUT IT'S FIRED WITH OIL BY VAPOFIER

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

Capacities from 70,000 to 4,000,000 B.T.U.'s per hour

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

MAKE YOUR OWN GAS WITH VAPOFIER

Do away with Gas shortages this winter. Send for FREE booklet "Make Your Own Gas With Vapofier."

VAPOFIER CORP. 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 11997 If you write the maker

One
OF A LINE . . . .

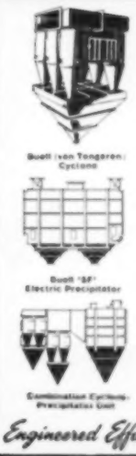
APPROVED BY THE AIR FORCE for Dependable Control

The Guardian Series 335 D. C. Relay, illustrated above, is but *one of a complete line* of Guardian Relays designed to permit more control in less space . . . more room for armament, power and personnel. Sensational Guardian developments include the famous "Guard-A-Seal" units specifically designed for aircraft and portable equipment, *sealed in aluminum.* They incorporate heavier frames, larger contacts, higher capacities, yet qualify under all AN weight requirements because the weight is in the relay—not the can!

GUARDIAN ELECTRIC
1620-M W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN - 11998 If you write the maker

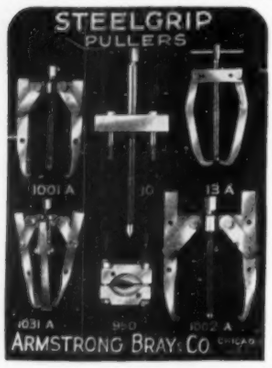
buell KNOWS
DUST RECOVERY



WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Dept. 22-K, 70 Pine St., New York 5, N. Y.

buell
Engineered Efficiency in Dust Recovery

BREVITY—Identify by IEN - 11999 If you write the maker



The 6 most needed pullers

A Complete Package Unit . . .

These popular pullers come on a permanent steel tool rack. The sizes and types of STEELGRIP Gear, Wheel and Bearing Pullers most frequently needed in tool room, maintenance shop and garage are now packaged on this practical heavy gauge fitted steel board. With these drop forged quality tools, you can pull wheels, gears, pulley pinions and bearing off from shafts easily and quickly without battering or breakage.

Pullers are cadmium plated; board finished in deep blue "hammered finish" with gold trim.

Write for catalog of Standard and Special Wheel Pullers.

ARMSTRONG-BRAY & CO.
5380 Northwest Highway, Chicago 30, Illinois

BREVITY—Identify by IEN - 12000 If you write the maker

For work that's "hard to clean"

CUTTING COMPOUNDS are quickly and thoroughly removed from shaft after machining. Rough metal stock is cleaned by same equipment.

HEAVY GREASES, used in storing parts, are rapidly dissolved by vapor degreasing. Metal parts of any size or shape can be cleaned—usually in a minute or less.

VAPOR DEGREASING
can cut your costs . . . minimize rejects

Intricate Metal Parts are quickly and efficiently cleaned by vapor degreasing with Du Pont Trichlorethylene. Vapor degreasing equipment is easy to install, easy to operate, easy to maintain. And it's especially applicable for plants either expanding production or beginning cleaning operations.

You, too, can keep cleaning costs down and increase production with vapor degreasing.

Du Pont Degreasing Solvents have been widely used for many years, and are available under various trade marks, such as "Triclene" D.

These solvents are stable . . . stand up against contaminating and destructive materials . . . are the best yet developed by Du Pont for metal degreasing.

DU PONT *non-flammable* SOLVENTS for VAPOR DEGREASING

SOLD NATIONALLY THROUGH DISTRIBUTORS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Mail the coupon below for more facts on vapor degreasing

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept., Wilmington 98, Delaware

Please send me detailed information on vapor degreasing: Applications, advantages, equipment used, and Du Pont solvents available. We are interested in cleaning _____ products.

Name _____ Position _____

Firm _____

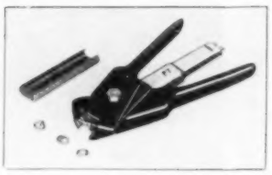
Street and No. _____

City _____ State _____

BREVITY—Identify by IEN - 12002 If you write the maker

STAPLING . . Hog ring plier feeds and closes ring staples on work

Source: BOSTITCH, INC.
959 Mechanic St., Westerly, R. I.



Works like ordinary plier

New design of the Model-T7 plier, previously described IEN-8020-49, is based on field experience over the past two years. The new tool now employs a heavy reinforcing plate over the top of the leading jaw to protect it against service abuse. It will now stand up in day-to-day operation without need for maintenance.

The plier takes a strip of 50 preformed hog-ring staples. It feeds them one at a time and closes them to finished form. Wire, rod, cord and cable to ½ in. in diameter can be passed through the opened staple. It can be closed to a minimum diameter of $\frac{1}{16}$ inch. The staples are pointed to penetrate fabrics. The closed staple will withstand approximately a 20-lb. pull without opening.

BREVITY—Identify by IEN - 12003 If you write the maker

RECTIFYING . . Selenium equipment, transformer and control for dc. supply

Source: UNITED CHROMIUM INC.
100 E. 42nd St., Room 1728, New York 17, N. Y.

Made by Richardson-Allen

Current rating is from 250 to 10,000 amp. in 250-amp. steps for the company's new Unichrome line of selenium rectifying equipment. Output ranges between 6 and 50 volts in seven selections. Each assembly is available as a complete unit in a ventilated rectangular housing or as a basic unit to include the rectifiers only and permit remote installation for control and meters.

Available controls include a 36-step tap switch, a 22-position non-interrupted voltage regulator, a step control employing saturable-core reactors for very small changes of voltage or current or for application where automatic voltage and current regulation are required.

BREVITY—Identify by IEN - 12004 If you write the maker

GAGE . . Pneumatic tool, reversing drive, to handle thread gage

Source: KELLER TOOL CO.
1948 Parks St., Grand Haven, Mich.

Quickly in and out

New assembly of one of the company's portable pneumatic drills includes a reversing clutch in combination with a friction clutch to take interchangeable adapters holding taper-lock gages. Operation is at about 300 rpm. to turn a gage into a hole in a work piece. Pulling back on the tool reverses the clutch and backs the gage out. The friction clutch is adjustable for a given torque.

An adapter to take taper-lock gages, with thread diameters from 0.510 to 0.825 in., is supplied with the tool. Others are available for gages ranging from 0.059 to 2.510 in. in thread diameter. Application of the tool eliminates the need for tedious and time consuming manual handling of a thread gage.

BREVITY—Identify by IEN - 12005 If you write the maker

POLISHING . . Lathe type machine, motor drive, speeds 50 to 3,600 rpm.

Source: STANDARD ELECTRICAL TOOL CO.
2489 River Rd., Cincinnati 4, Ohio

About 1,200 pounds

Type BDYT is a recently improved design in the company's line of chucking lathes for operations such as polishing, burring, reaming, filing, countersinking. It is supplied with a headstock and tailstock and belt-connected motor drive for single, multiple or variable speed as required for given installations. The tailstock rides ways on a vertically-adjustable table that provides for 20-in. maximum swing.

A combination switch and brake controls the motor to stop the work spindle quickly. Foot-pedal control and air chucking equipment can be specified. Through hole in the spindle is maximum at 2-in. diameter. The spindle nose can be specified to accept a face plate, collect chuck, lathe chuck, air chuck, air expanding mandrel or special work-holding fixture.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12006 If you write the maker

Tap #0 to ¾" with . . . 1 Commander TAPPER

The Commander Tapper's exclusive torque control thinks for its operator — automatically stops when taps are dull, overloaded or strike bottom in blind hole tapping.

You get maximum tap protection because the torque control can be set to protect all taps in the range from No. 0 to ¾ in.

Spring clutch drive eliminates slippage and wear — provides smooth, quiet, easy operation.

Commander Tappers are furnished to fit any drill press.

Write for illustrated circular and name of nearest DISTRIBUTOR

COMMANDER MFG. CO.
4219 W. KINZIE ST.
CHICAGO 24, ILL.

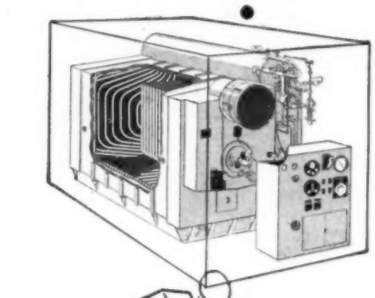
ANY OPERATOR DOES PRECISION TAPPING WITH A COMMANDER TAPPER

Product of *Commander* builder of the *Multi-Drill*

BREVITY—Identify by IEN - 12007 If you write the maker

Standardized Steam
for loads of
3,500 to 25,000 per. hr.

IT'S THE *NEW* B & W SHOP-ASSEMBLED UNIT



B&W Integral-Furnace Boiler, Type FM

Note these *Cost-Saving* features

Saves Erection Time and Cost · Meets Wide Range of Services · Handles Quick Load Changes · Fast Steaming · Low Maintenance · Easy Accessibility · Suitable for Outdoor Service · Burns Oil and/or Gas · Saves Fuel · Saves Space · Safe, Automatic Operation.

SEND FOR BULLETIN G-72. detailing the many advantages of this new B&W creation in low-cost steam generation. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y.

BABCOCK & WILCOX

Helping Industry Cut Steam Costs since 1867

G-548

BREVITY—Identify by IEN - 12009 If you write the maker

5500 lbs. IMPACT

WITH THIS

Bellows Air-Powered PRESS

THIS spring-loaded impact press operates on any air line pressure from 20 lbs. to 175 lbs. . . . develops a controlled impact force ranging from a few pounds up to approximately 5500 pounds at 100 lbs. air pressure.

Ram shaft has a maximum clearance of 13-7/16" (maximum ram movement 1¼" with a vertical adjustment of 12"). Throat clearance 7".

The Bellows "Controlled-Air-Power" Impact Press is available with either electrical or manual foot controls, or with two hand safety controls.

Write for Bulletin IEN-1151

The Bellows Co.
AKRON 9, OHIO

"Controlled-Air-Power"
For Faster, Safer, Better Production

BREVITY—Identify by IEN - 12010 If you write the maker

IS YOUR SURFACE RESISTANCE LOW ENOUGH?

Are your spot welding costs low enough?

This 18-page illustrated booklet tells how to get better surface preparation of aluminum before spot welding.

¶ Have you tried the latest Oakite recommendations for cleaning and deoxidizing Alclad 24S? 52S? 2S? 61ST-4? XB 75ST? 301? *See pages 3 to 8.*

¶ How long should these alloys remain in the deoxidizing solution? *See Immersion Charts on pages 9 and 10.*

¶ What effects do different immersion times have on resistance? *See Resistance Curves on page 11.*

¶ What's the best rinse temperature after cleaning? after deoxidizing? *See page 12.*

¶ Do you have efficient controls for the concentration and temperature of your cleaning and deoxidizing solutions? *See page 14.*

¶ What advantages should you insist on when selecting materials for preparing aluminum for spot welding? *See page 17.*

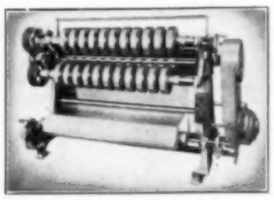
FREE For your copy of "*5 things to know about preparing aluminum for spot welding*" write to Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE
Technical Service Representatives in Principal Cities of U. S. & Canada

BREVITY—Identify by IEN - 12012 If you write the maker

CUTTING . . Slitter and rewinder for plastic film, foil laminates

Source: CHARLES BECK MACHINE CORP. 412-14 N. 13th St., Philadelphia 8, Pa.



Uses Durham Duplex blades

New design of the company's razor-blade slitting and rewinding machine is available for rolls measuring 30 to 60 in. in width. The machine can be set to slit desired width starting at ½ in. and adjusting upward in ⅛-in. steps. A standard set of razor-blade cutters and spacer will handle 15 rewinds. Additional cutters and spacers can be supplied. Mill rolls to 28 in. in diameter and rewind-rolls to 40 in. in diameter mount at the front of the machine where the operating controls also are located. Floor space measures 64 to 94 in. in width, 47 in. from front to back. The machine stands 55½ in. in height. Weight is 1,400 to 1,850 pounds.

The material feeds upward to ride over three idler rolls that iron out wrinkles and assure constant wrap around the grooved cutting roll. This roll supports the material and allows the razor blades to protrude through and into the clearance grooves without touching the roll itself. The slit material rides forward for rewind on two shafts at the front of the machine. The drive is designed to maintain constant tension and also to compensate for varying thickness of material. Blades can be changed in a second or two for each one with the aid of a gage and a snap fastener in the blade holder.

A trim blower is available to handle materials lacking sufficient body to drop away from the machine. Static-eliminating equipment can be added at the time the machine is assembled. Spare shafts for the rewind and for the mill roll are recommended for preparation while the machine is operating to minimize changeover time.

Bulletin, 8 pages, "Beck Razor Blade Slitter and Rewinder", presents illustrated description of the machine.

BREVITY—Identify by IEN - 12013 If you write the maker

GAGE . . Flexible steel rule, 6, 8 and 10 ft. lengths, in steel case

Source: MASTER RULE MFG. CO. 38-42 Mulberry St., Dept. IE, Middletown, N. Y.

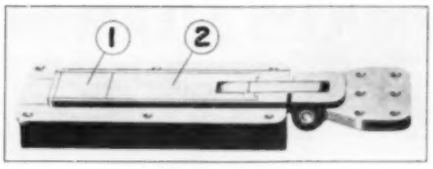
Turns over to read

Open base in the case housing of this new rule combines with a locking lever to permit setting up the rule to an inside measurement and locking this measurement so it can be read after the rule and case have been withdrawn. The steel unit carries graduations on both edges of both sides. It is available with etched blue steel or black on white markings. List price is $2.50 to $3.25. Replacement blades list at 80 cents.

BREVITY—Identify by IEN - 12014 If you write the maker

FASTENING . . Flush toggle latch to apply on a door or an access panel

Source: SIMMONDS AEROCESSORIES INC. 103-7 White Plains Road, Dept. IEN, Tarrytown, N. Y.



Push to release or latch

New Access Latch, shown in closed position in the illustration, is a two-part assembly consisting of the box-type door or panel-mounting part to the left and the hinged frame-assembly part to the right. Pressing a latch plate 1, which forms a part of the box assembly, releases a hook from a pin in the toggle lever and operates a kicker device which forces the latch lever 2 upward. This lever can then be withdrawn from the box to separate the two parts for complete disengagement.

The latch acts as a hinge on which a door can be swung open in closed and locked position. When the unit is used in multiple on the two sides of a panel, it is possible to remove the panel completely from an access opening. When under load, the latch is self-closing over dead center. The panel or door must be in locking position before the lock will assume its flush position. Weight is about 3½ ounces. Breaking load in tension is 2,700 lb. and in shear is 5,000 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 12015 If you write the maker

For the tough processing jobs . . .

CYCLONE
METAL CONVEYOR BELTS

● If your processing operations call for conveyor belts to operate through water, steam, heat, oils or chemicals, then yours is a job for Cyclone Metal Conveyor Belts. Immersion can't affect their operating reliability, making them especially adaptable for conveying materials and products in and out of liquid baths and sprays.

Available in three styles . . . Chain Link (shown), Flat Wire and Flex-Grid . . . and in a variety of sizes, metals and alloys, Cyclone Metal Conveyor Belts will save you money by speeding production, reducing labor costs and cutting maintenance.

For the full story on Cyclone Metal Conveyor Belts, write for Catalog No. 4, or ask the nearest Cyclone sales office for detailed information. You'll find offices in most principal cities.

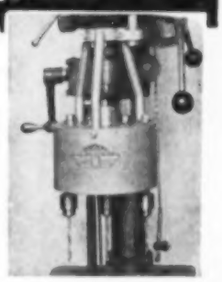
CYCLONE FENCE DIVISION
(American Steel & Wire Company)
DEPT. C-111, WAUKEGAN, ILL.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS CYCLONE
METAL CONVEYOR BELTS
UNITED STATES STEEL

BREVITY—Identify by IEN - 12016 If you write the maker

Here's How to TRIPLE PRODUCTION!

Install this New, Low-cost 3-Spindle DRILL HEAD Only $98.50!



Small shops — big shops — medium size shops—ALL find a hundred uses for this new Silver-King 3-Spindle Drill Head — a hundred ways in which it can help speed up production.
Here are the high spots. Adjustable Spindles. Fits all Single Spindle Presses. Perfect for drilling metal, wood or plastic. Three Jacobs Chucks. One-fourth inch capacity. Adjustable centers 1⅝" to 5⅝".

Regardless of how large or how small your production may be, you'll find a need for several of these low-cost 3-Spindle Drill Heads. *More than once, one of them has paid for itself on one job.* Send order on regular Purchase Form or write for Illustrated Folder and full details. IMMEDIATE DELIVERY.

SILVER-KING CORP.
622 Diversey Parkway, Chicago 14, Ill.

BREVITY—Identify by IEN - 12017 If you write the maker

HARPER *can tell you . . .*

because Harper deals in them *all!* Long experience and specialized production in all types and sizes of fastenings in *all* alloys mean just the right kinds for your needs—whether your problem is corrosion, abrasion, heat, stress, or appearance. Over 7000 items—bolts, screws, nuts, rivets and accessories—in stock ready for delivery from warehouses and distributors, nationwide. Send coupon for information and New Harper Catalog.

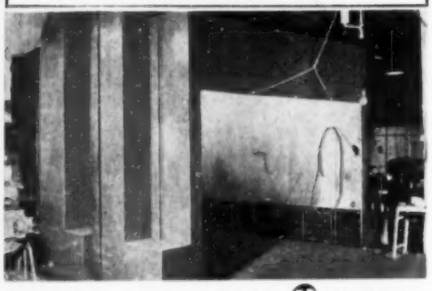
The H. M. Harper Co.,
8211 Lehigh Ave., Morton Grove, Ill.
Send my free copy of the New Harper Catalog. (Please Print)
Name .....
Address .....
City ..... State .....

HARPER
EVERLASTING FASTENINGS

SPECIALISTS IN ALL NON-CORROSIVE METALS

BREVITY—Identify by IEN - 12018 If you write the maker

EVER HEAR OF A DOWN-DRAFT BOOTH WITHOUT A PIT?



It's Easy With this Economical, Effective RP Paint Arrestor Installation!

When floor construction made a down-draft booth for painting small industrial equipment items impractical, this manufacturer solved the problem with R-P Paint Arrestors. And . . . he now has the fourth installation of this type. Many other installations are possible with versatile R-P Paint Arrestors.

WRITE FOR FREE BOOKLET

Helpful, informative suggestions to solve your paint spray booth problems. Write today.

RESEARCH PRODUCTS CORPORATION
Dept. IN Madison 10, Wisconsin

RP . . . PRODUCTS OF RESEARCH

BREVITY—Identify by IEN - 12019 If you write the maker

THE FLORLINE MARKING MACHINE

Makes Safety & Parking Lines At Walking Speed!

Often pays for itself on the first job! 1 man alone can do the floor marking in 1 day that previously took an entire crew.

- Makes curved, straight, continuous or skip lines . . . 2, 3, or 4 inches wide with interchangeable carriages.
- Holds 1½ gals. paint, lacquer, whitewash . . . cannot spill.
- No motor, compressor or attachments.
- One man, one hand operation.
- Portable, efficient, speedy.
- Operates on gravity feed.
- Easy to clean and store.

$97.50
F.O.B. Detroit
Fully Guaranteed.

H. C. SWEET CO.
12083 Woodbine Avenue Detroit 28, Michigan

BREVITY—Identify by IEN - 12020 If you write the maker

NO Towels / Mess / Servicing

with the perfected, automatic NATIONAL HAND DRYER

—dries hands completely dry in 20 seconds!

Eliminates the constantly mounting cost of paper towels or towel service—no storage problem, no filling of cabinets, no removal, cleaning and disposal time or attention. No time when clean, sanitary drying service is not available.

Do you really know how much your wash room service is costing you?

One fast-acting, tamper-proof National Hand Dryer serves 1½ to 2 wash basins, pays for its cost in actual cash outlays in 12 to 18 months, gives quick, soothing drying service at the touch of a button, and is rapidly winning preference in hand drying because of its fast, pleasing action.

Let us show you an actual example of continuous cost savings with National Dryers over towels. Fill in the coupon and attach to your letterhead for quick response.

NATIONAL DRYER SALES CORPORATION
Dept. IEN-11, 616 West Adams St., Chicago 6
Without obligation, send complete information on National Hand Dryers and example of cost savings.
( ) Also send information on National Hair Dryers.
Name .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 12021 If you write the maker

HEATING . . Induction equipment heats aluminum to forge or extrude

Source: MAGNETHERMIC CORP.
704 Andrews Ave., Youngstown 1, Ohio

Hot slugs to order

New assembly in the company's line of 60-cycle induction heating equipment, previously described IEN-5027-51, has capacity for 800 slugs per hr. of aluminum weighing 6 ounces each. The machine occupies a space measuring 36 by 36 in. and can be equipped with automatic work handling to feed slugs to it and to take them away. The heater is available to specification for slugs measuring 1½ in. in diameter or more as required.

The slugs are fed to a magazine at the top of the machine from where they move downward vertically through the heating coil to be ejected one at a time by a horizontal air cylinder on the machine housing. They move from heated position to a chute leading to the side of the housing where they can be taken away manually or by conveyor.

BREVITY—Identify by IEN - 12022 If you write the maker

MARKING . . Cloth labels, pressure adhesive backed, in rolls

Source: TOPFLIGHT TAPE CO.
114-18 E. Market St., Room 12, York, Pa.

Not faced with plastic

Please note our error in IEN-9879-51 in which we described the company's new pressure-sensitive waterproof cloth labels as plastic faced. Actually the cloth is plain except for the specified printing on its face and the adhesive on its back to adhere by pressure application.

BREVITY—Identify by IEN - 12023 If you write the maker

CLAMP . . Insulated design to hold wiring, latches open and closed

Source: TINNERMAN PRODUCTS INC.
Box 6688-A, Dept. 14, Cleveland 1, Ohio

Note tongue and slot

New clamp can be used singly or in tandem to hold bundles of wire for an overall bundle diameter of $\frac{1}{16}$ to 1¼ inch. It secures by a single screw to a support surface. It latches into open or closed position so no tools are required, after it has been installed, when wiring is to be added or removed. The clamp is made of steel with suitable insulation. It can be preassembled on a bundle of wiring to assist in initial installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12024 If you write the maker

SAVINGS IN PROCESS STEAM

In 66 industries Cochrane C-B System of Condensate Drainage Control has helped produce quality goods at lower cost through better steam usage. By providing optimum heat at process equipment, returning condensate to boiler at practically the same temperature and pressure as when it left, and by draining condensate free of entrained air to boiler without heat loss, it has resulted in better products at substantial savings in fuel, time and labor. Write for Publication 3250 and you will get some profitable ideas on how to get more out of your process steam.

COCHRANE C-B SYSTEM OF CONDENSATE DRAINAGE CONTROL

COCHRANE CORPORATION
3152 N. 17th Street, Philadelphia 32, Pa.
In Canada: Canadian General Electric Co., Ltd., Toronto
Please send me a copy of your Publication No. 3250 on Cochrane C-B System of Condensate Drainage Control
Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 12025 If you write the maker

KEEP TROUBLES OUT . . . put *Stainless Steel* FLOATS *in*

COMMON float failures can cause costly repairs and shutdowns which cut down on the efficiency of plant operations. That's why it pays to specify stainless steel floats in order to get long, trouble-free service in all but extremely specialized applications where specific materials are required.

When you use Chicago's stainless floats, you're assured of the best floats available—floats that will pay big dividends in less maintenance and more continuous service. Specify Chicago's stainless floats and keep troubles out!

WRITE FOR FREE CATALOG

CHICAGO FLOAT WORKS, INC.
2326 So. Western Ave.
Chicago 8, Illinois

BREVITY—Identify by IEN - 12026 If you write the maker

What Does T SHOT GRIT Mean To You?

A test run of "T" Abrasives in your plant under your supervision will conclusively prove to you that—

- **"T" means faster cleaning of castings, forgings and heat treated parts!**
- **"T" means up to 88% longer abrasive life!**
- **"T" means longer equipment life — blades, slats, end plates, etc.**
- **"T" means 15% to 50% reduction in total maintenance and abrasive costs.**

The specific claims made above are backed by *A SPECIFIC PERFORMANCE GUARANTEE* by the producers, National Metal Abrasive Co. and Western Metal Abrasives Co.

For full particulars about "T" Shot and Grit and PERMABRASIVE, the "MALLEABLIZED "T" Abrasive, contact the H. W. office nearest you.

Hickman, Williams & Co.
INCORPORATED
CHICAGO · DETROIT · CINCINNATI · ST. LOUIS · NEW YORK
CLEVELAND · PHILADELPHIA · PITTSBURGH · INDIANAPOLIS
Established 1890

BREVITY—Identify by IEN - 12028 If you write the maker

The Famous Sutton MOTOR DRIVEN PRESSURE BLOWER

THREE SIZES ¼, ½, 1 H.P.

ORDERED BY EVERY BIG NAME IN THE COUNTRY!

USED FOR EXHAUSTING DUST, SMOKE, FUMES, VAPOR..COOLING AND DRYING..CONVEYING COTTON, WOOL, SHAVINGS..FORGE BLASTING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY to reduce weight and increase strength. CENTRIFUGAL TYPE. Delivers even, nonpulsating flow of air. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

WRITE FOR LITERATURE AND PRICES

Sutton *Manufacturing Corp.*
112 W. WILSON AVENUE NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 12029 If you write the maker

SAND-O-FLEX

eliminates hand sanding

on propeller blades

before

after

unretouched photographs

These cast aluminum blades are used in aircraft heaters manufactured by Dynamic Air Engineering Co., Los Angeles. After the burrs are filed off, props are finished with Sand-O-Flex brush-backed sanders which get in and around the blades and gives them a smooth satin finish in a fraction of the time of sanding them by hand.

If you have a hand sanding or deburring operation, you need Sand-O-Flex. Four sizes available for portable or for heavy-duty production line requirements. They fit your present power tools, no special equipment to buy. Write for free catalog and prices.

merit products, inc. | 4023 Irving Place Culver City, Calif.

BREVITY—Identify by IEN - 12030 If you write the maker

LUSTRA FLUORESCENT LAMPS

longer life . . . better light . . . lower maintenance cost

WHETHER for general, commercial or industrial lighting, you'll get new efficiency and new savings with Lustra Fluorescent Lamps.

Lustra Fluorescents are unsurpassed for long life, high light output, and high *maintained* brightness throughout the life of the tubes. And Lustra's superior coatings give more evenly-diffused light from end to end. Color characteristics are dependably uniform . . . replacements always identical.

Lustra Fluorescent Lamps are made in a full color range . . . soft white, warm white, deluxe warm white . . . 3500° white, cool white, deluxe cool white, daylight. Send for the full Lustra story now. Lustra Corporation, Dept. P-11, 36 Washington St., Brooklyn 1, New York.

Lustra

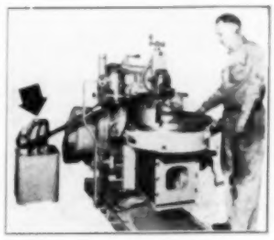
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

BREVITY—Identify by IEN - 12031 If you write the maker

SHAPING . . Follower equipped machine to duplicate contours on metal parts

Source: CINCINNATI SHAPER CO.
Gerrard & Hoppie St., Dept. I.E., Cincinnati 25, Ohio



No form tools needed

New assembly of the company's shaper and a Turchan hydraulic follower adapts the shaper to copy finished work or to follow sheet-metal templates in production of work with intricate contours. The assembly supplements the mechanical follower set-up, previously described IEN-806-51.

Two feed movements, horizontal and vertical, produce the desired work contour. One employs the steadily operating cross feed on the shaper table. The other is by a hydraulic cylinder mounted in the base of the shaper beneath the table-elevating screw. Vertical movement in this cylinder is actuated by a follower point contacting the template or master work piece to actuate the hydraulic mechanism for rising or lowering. Application can be made also with a rotating table as shown in the illustration. In this case the steady feed is the rotating drive in combination with the vertical hydraulic table action.

The company is prepared to supply the shaper and the hydraulic equipment for any of its shapers between 16 and 36 inches. Required template thickness is minimum at 20 gage. Pressure on the actuating stylus is about 1 pound.

BREVITY—Identify by IEN - 12032 If you write the maker

BRAZING . . Flux and alloy preforms available in exact required shapes

Source: PRESSINT PRODUCTS
Box 4514-A, Cleveland 24, Ohio

Sample pieces upon request

Powdered flux and suitable alloy for brazing and silver soldering in powdered form are combined in a press. Preformed pieces result in this new development in round, rectangular, triangular shapes either solid or with open centers to be used in brazing assemblies by application of flame from a torch, in an atmosphere furnace, or by induction heating.

The preforms are economical of flux and alloy since they are made to exactly fit a given job. Their use eliminates need for expert control by the brazing operator and assists in exact duplication of results from one shipment to the next. They can be made in any size to a maximum equivalent to ¾ in. in diameter of diagonal measurement with maximum thickness at ¼ inch. Parts under ⅛ in. in diameter with a 1/32-in. center opening are about minimum to the present time.

Prior to quotation the company will supply sample preforms of recommended alloy and flux with variations in the relative quantities of both materials for trial purposes. Following this the company is prepared to recommend the exact combination and will make a set quotation.

In application the flux begins to melt and is completely active at a temperature lower than that at which the alloy becomes liquid. The flux dissolves the oxide and cleans the metal surfaces so the alloy can flow as required to complete the brazing operation on the metal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 12033 If you write the maker

NO Lubricant Cost
NO Lubrication Labor

TRANSALL Heavy duty Idlers are

Pre-Lubricated

Because of the permanent lubrication and the rugged construction, TRANSALL Idlers have a greater life expectancy than other makes of idlers. The more severe the service, the greater this advantage.

Why not investigate how we can help you keep operating costs to a minimum?

TRANSALL Idlers will probably slip right into your present installations, since they are dimensionally interchangeable with most leading lines.

Immediate Shipment

TRANSALL INC.

Manufacturers of a complete line of Belt Conveyor Equipment

117 North 11th St. Birmingham 4, Ala.

BREVITY—Identify by IEN - 12034 If you write the maker

LETTER *like a professional*

WITH NEW WRICO GUIDES

Our new WRICO guides enable even the inexperienced draftsman to make really professional lettering.

The new, superior guide holder (exclusive with WRICO) eliminates the need for a straightedge. When the holder is in position there is no chance of slipping, and it keeps the guide in accurate alignment at all times.

With the WRICO three-way scriber you can make vertical, slant or italic letters *without changing guides.* A simple adjustment does the trick.

Use WRICO guides and you're sure to get sharp, clean letters everytime—and in far less time.

BRUNING

Write today for free descriptive literature.

CHARLES BRUNING CO., INC., DEPT. H-111A, 100 READE ST., N. Y. 13, N. Y.

BREVITY—Identify by IEN - 12035 If you write the maker

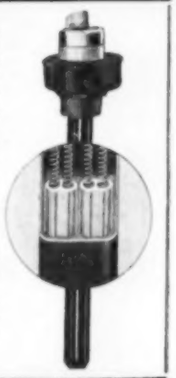
Specifications for a Good IMMERSION HEATER

SEAMLESS STEEL OR COPPER BLADES (tubes)—strong, rigid, durable—giving maximum protection to their internal structure. One, two or three blade styles, for oil or water.

NICKEL-CHROME RESISTANCE WIRE in high-quality refractory tubes, definitely locating the elements in relation to the metal casing for its entire length.

ALL FREE SPACES filled with refractory powder by method that assures maximum heat conduction and absence of dead air.

TERMINAL HEAD welded or brazed to blades. Removable outlet box (with or without switch) can be rotated to suit wiring. Heat can be uniformly maintained for entire length of unit or concentrated at selected portions.



* * *

Those are the highlights of the TRENT specifications—proven in hundreds of different Immersion Heater applications to provide MORE UNIFORM HEAT, with minimum maintenance. Write for Bulletin 74-TA.

TRENT INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27 PA

BREVITY—Identify by IEN - 12036 If you write the maker

FLEXLOC

SELF-LOCKING NUTS Help PTC to "KEEP 'EM ROLLING!"

Every day thousands of Philadelphians depend on Philadelphia Transportation Company buses. To "keep 'em rolling," PTC's maintenance must be constant and thorough, since minor failures often cause major breakdowns.

For example, the hex nuts on bus rear axle flanges were being loosened by vibration, despite periodic inspections. Sheared studs resulted. Replacements were expensive, disrupted schedules and loss of riders' goodwill even more so. PTC tried FLEXLOC Self-Locking Nuts, found them a simple, economical solution to the problem.

FLEXLOCs stayed *tight,* eliminated shearing of studs. Yet FLEXLOCs were easy to remove when necessary, could be re-used again and again. Furthermore, FLEXLOC *dependability* reduced the number of maintenance checks needed, effecting additional savings.

If you have to contend with vibration in your business, try FLEXLOC Self-Locking Nuts—free! Just tell us the size; and we'll gladly send samples.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 12037 If you write the maker

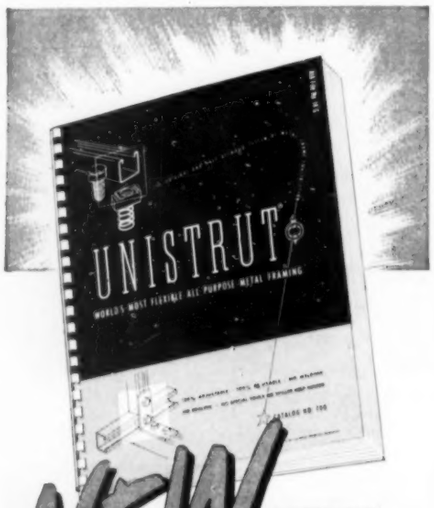
PRATER PERMANENT MAGNETS

HIGH FREQUENCY EXTRA STRENGTH

Reaches inches deep into flow to weed out all unwanted tramp iron. Operates with powerful Alnico magnets. No visible nuts, bolts or sharp edges to hinder production. No complicated adjustments or wiring problem. Many trouble-free years of dependable service. Easily installed at any point of flow on most metal or wood constructions. Send for complete facts, today.

PRATER PULVERIZER COMPANY
1536 S. 55TH COURT • CHICAGO 50, ILL.

BREVITY—Identify by IEN - 12038 If you write the maker



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78 Illustrated Pages on How to Frame, Hang, Support and Mount many kinds of Mechanical and Electrical Equipment with UNISTRUT All-Purpose Metal Framing

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Please send me Free 78-page Unistrut Rack Catalog.

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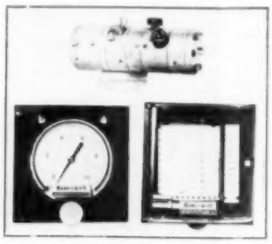
Company _____
Address _____
City _____ Zone _____ State _____

BREVITY—Identify by IEN - 12040 If you write the maker

CONTROL . . Pneumatic equipment for remote variable process control

Source: MINNEAPOLIS-HONEYWELL REGULATOR CO. 4456 Wayne Ave., Philadelphia 44, Pa.



Control controls control

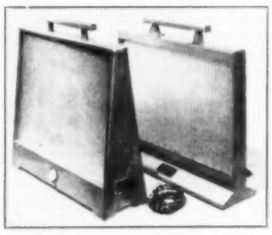
Tel-O-Set trade names new assembly of pneumatic equipment for remote control of process variables such as flow, liquid level, pressure, temperature in which it is desired to vary the control point by remote or local variation in a "set point" air-pressure range between 3 and 15 pounds. The equipment consists of a pressure transmitter for the measured variable, the diaphragm-type pneumatic controller itself and an indicator and recorder for application in the output control line to a diaphragm valve in the controlled-process line. Either fixed or adjustable-band controller can be specified.

Connections are made to the controller from a source for 20-lb. control-line air, from the measured variable pressure and from the set point pressure source. There is also an output-line connection to lead to the indicator, the controller and the diaphragm valve or other units of diaphragm-operated process-control equipment. The variable pressures act upon opposing sides of diaphragms within the controller in connection with a pilot-relay valve and interconnecting air passages. A condition of balance is established for each set-point pressure in the range between 3 and 15 pounds. This position also establishes the pressure, in a range between 3 and 15 lb., that issues from the controller to operate the indicating and recording instruments and the diaphragm process controller.

BREVITY—Identify by IEN - 12041 If you write the maker

HEATING . . Electric space unit, portable, employs radiant glass panel

Source: RADIANT GLASS APPLIANCE CORP. 951 Lackawanna Ave., Norwich, N. Y.



O.K. by Underwriters Laboratories

Three models are included in this new line of portable radiant electric heaters. A glass-enclosed metal grid acts as the heating element and the glass as the radiating surface. Model D, to the right in the illustration, is standard design with a metal frame and wood base. It measures 20½ by 5½ by 19½ inches. It lists at about $35. A carrying handle is included.

Model DS, shown to the left, is assembled in a metal frame and base. It measures 20½ by 6½ by 20½ in. and lists at $40. Model DP is the same as Model DS with a thermostat for heat control. It lists at $48. All three operate on 110 or 220-volt ac. or dc., rate 1,250 watts. Weight is about 20 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12042 If you write the maker

Belt Driven Duct Fan. Powered by Recognized Accepted Make Motors. Propeller Pitch Adjustable. High Tensile Strength Cast Aluminum Blades.

BELT DRIVEN DUCT FANS. For spray booths, volatile or explosive fumes, excessive temperatures, dust or any operation requiring the motor to be out of the air stream.

JOB fitted DUCT FANS in sizes from 14" to 72" in diameter and from 1000 to 100,000 C. F. M.

Utility Man Cooler
Portable Man Coolers
Roof Ventilators
Duct Type Fans
Duo Duct
Direct or Belt Driven

Represented in All Principal Cities
Write Dept. 1102 for Complete Catalog

THE HARVEY P. BERTRAM CO.
1008 W. Ninth St. Cincinnati, Ohio

BREVITY—Identify by IEN - 12043 If you write the maker

Checkerette

Thick "knock-down" wardrobe rack answers almost any "wraps" problem, because it can be set up anywhere in a few minutes without nuts, bolts or tools . . . can be disassembled and stored in small space when not in use. It is ideal for installation near point of work, occupies only 1' x 4' floorspace; is ideal for company cafeterias, offices, laboratories and meeting rooms.

It will hold wraps by day and shop coats at night and keep both aired and dry.

Modern, efficient designs, welded steel construction, rigid in use (all members held under tension).

Write for Circular CT 05

VOGEL - PETERSON CO.
624 So. Michigan Ave., Chicago 5, Ill.

BREVITY—Identify by IEN - 12044 If you write the maker

saves time! **saves labor!** **saves money!**

Users of Enamelstrip in continuous-feed coils completely eliminate such costly, time-consuming operations as hand feeding, shearing, cleaning, tumbling, spraying, dipping, rustproofing, baking, drying. Enamelstrip's exclusive pre-treatment and finishing process achieves a flexible lustrous finish which withstands the stresses of drawing, bending and forming without cracking or peeling. Fabricate your metal parts and products from Enamelstrip to be sure of a smooth, glossy finish *at reduced costs!*

ENAMELSTRIP in any metal, any color, coated and precision slit to your specifications.

TODAY

see how this important new development improves production . . . and profits! Write immediately for detailed descriptive bulletin to our *National Sales Representatives:*

THE COATED COIL CORPORATION
511 West 30th St., New York 1 • LOngacre 5-3161

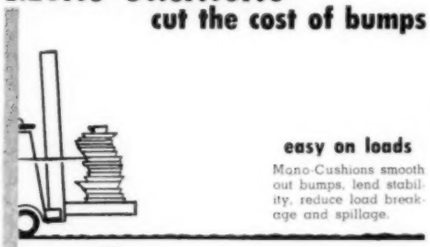
BREVITY—Identify by IEN - 12046 If you write the maker

We've learned about Strippers from you . . .

To know your Strippers, you have first to know about your paint and all of the conditions of its application—we've learned that the problem of Stripping has many ramifications such as: 1. types of paint, 2. number of coats, 3. basis metal and/or surface treatment, 4. Air or force dry . . . With all of these variables involved, there, of course, is no one Stripper that can take care of any and all jobs. That is why we say we have learned, in most cases, that it requires a laboratory examination of your paint to determine which product (compound) applied before a satisfactory operation of Stripping can be set up . . . Write for complete information regarding this or any other metal cleaning problem. . . .

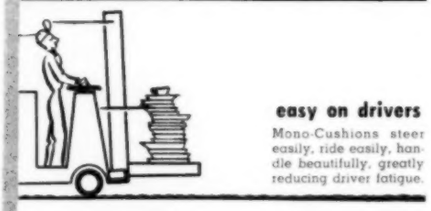
BREVITY—Identify by IEN - 12047 If you write the maker

Mono-Cushions cut the cost of bumps



easy on loads

Mono-Cushions smooth out bumps, lend stability, reduce load breakage and spillage.



easy on drivers

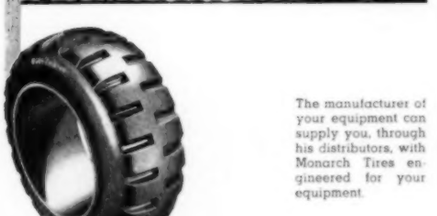
Mono-Cushions steer easily, ride easily, handle beautifully, greatly reducing driver fatigue.

easy on vehicles

Mono-Cushions fairly soak up shock and shock load, reduce maintenance as much as 40%.

easy on floors

Easy-going Mono-Cushions roll gently, silently, over floor surfaces, reduce floor maintenance.



The manufacturer of your equipment can supply you, through his distributors, with Monarch Tires engineered for your equipment.

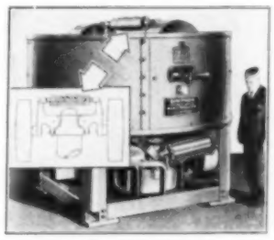
THE MONARCH RUBBER COMPANY
201 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

BREVITY—Identify by IEN - 12049 If you write the maker

FOUNDRIES . . Sand conditioner, muller type, 30 and 60 ton per hour

Source: NATIONAL ENGINEERING CO. 545-47 W. Washington Blvd., Chicago 6, Ill.



Note the adjusting spring

Adjustable pressure obtained by means of a spring assembly is employed to load the comparatively lightweight wheels in this new Model 2F and 3F Simpson Mix-Muller. Pressure can be adapted to the type of sand being handled. The plow design combines with the mulling action to subject the sand to violent agitation that considerably increases its volume. Agglomerate grains are broken up. Any tendency to form muller cake is minimized and a fluffy sand of high flowability results.

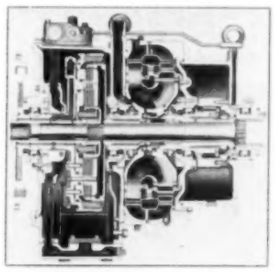
The two designs have batch capacities of 1 and 2 ton. They are driven respectively by 30 and 75-hp. motors at speeds of 582 and 600 fpm. Mulling pressure is adjustable between 800 and 2,000 lb. in the smaller machine, 1,600 and 4,000 lb. in the larger one. Capacities are 30 and 60 ton per hr. based on a 2-min. cycle. Diameters are 80 and 100 inches.

Bulletin 511, 6 pages, presents detail illustrated description covering design and operation including a comparison table between the new and previous designs in corresponding sizes.

BREVITY—Identify by IEN - 12050 If you write the maker

DRIVE . . Hydraulic transmission for heavy equipment subject to impact

Source: TWIN DISC CLUTCH CO. 1401 Racine St., Racine, Wis.



Absorbs transmission impact

Model DF is a new assembly of hydraulically-actuated friction clutch and torque converter, also hydraulically actuated and equipped with a set of stationary reactor blades. The transmission has been applied in trucks hauling loads to 30 ton up grades as steep as 13 per cent, over road surfaces subject to ice, mud and chuck holes. Approximately 99 per cent of the forward gear shifting is eliminated. Hydraulic braking also is provided to do most of the retarding job required for truck return down the steep grade.

The assembly is made up of three major elements to include the hydraulically-actuated clutch, the basic torque converter and a free-wheel assembly. Control centers at a hydraulic valve at which the operator selects neutral, torque-converter drive, mechanical drive and combined engine and hydraulic braking to suit the conditions encountered.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 12051 If you write the maker

FAN MAIL!

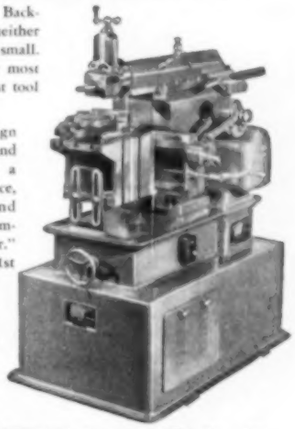
"Approximately nine months ago we installed an INTERNATIONAL RETRACTABLE ANVIL STAPLE MACHINE, Model HASO on our production line, and since that time have had no complaints regarding our packaging and find that we have saved considerable man hours in our packaging operation."

METAL BED RAIL COMPANY LEXINGTON, KY.

INTERNATIONAL STAPLE & MACHINE CO.
HERRIN 5, ILL.
DISTRIBUTORS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 12052 If you write the maker

Big Shaper Performance Small Shaper Price



The SHELDON 12" Back-Geared Shaper is neither too big, nor too small. It is just right for most shaper work in most tool rooms and shops.

In weight, design features, capacity and performance, it is a "big shaper." In price, operating cost and floor space, it resembles a "small shaper." It is the logical 1st shaper for the small shop and a cost-cutting tool in multiple installations in large plants.

Write for Catalog.

SHELDON
CHICAGO
SHELDON MACHINE CO., Inc., 4208 N. Knox Ave., Chicago 41, Illinois

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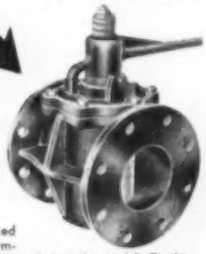

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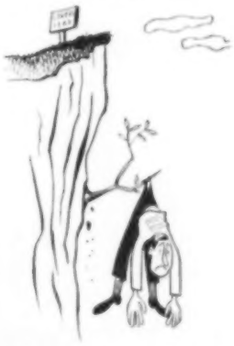

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threads are strong, too

with a continuous grain flow that increases tensile strength, shear strength and fatigue life. Threads are held to close limits. All UNBRAKO Screws are being made to ±3 thread tolerance—the highest grade of interchangeable screw-thread work. Write for your UNBRAKO Catalog.

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Use INLAND *SPEED-FLO* STITCHING WIRE

No delays caused by wire breakage, kinks or twisting. Speed-Flo wire flows freely from coil to stitcher head.

Speed-Flo wire is processed twice by exclusive UNI-DRAW method for smooth, bright finish, uniform shaping and sizing with an added margin of strength.

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WHAT YOU WIN: A delightful, all-expense ten-day holiday in colorful Mexico for two persons. RULES OF CONTEST: Write a letter in 200 words or less, describing an effective, problem-solving use of Decalcomania by your company or industry. Contest is open to any commercial user of Decalcomania, regardless of type of usage or source of supply. You do not have to be a Meyercord customer. Coupon is your official entry blank. Fill out and attach to entry. Please use Company letterhead. Contest ends midnight, January 15, 1952. All entries become the property of The Meyercord Company. Decision of judges shall be final. In case of a tie, duplicate prizes will be awarded. Winners' names will be published. Employees of The Meyercord Company, its retail dealers or advertising agency are ineligible. JUDGING: Entries will be judged on the basis of practical and interesting problem-solving uses of Decalcomania. Enter the Contest TODAY! Anyone can Win! Attach this entry blank to your letter and mail to The Meyercord Co., 5323 W. Lake St., Chicago, Illinois. Box 2-11.

Name_____

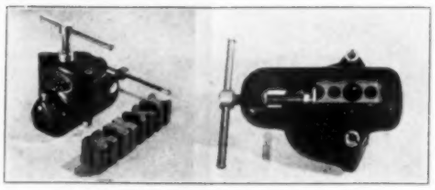
Address_____ Firm_____

City_____ State_____

▼ BREVITY—Identify by IEN - 12058 If you write the maker ▼

TUBE FLARING .. Hand tool, for single or double flare, to 3/4 inch

Source: PENN AIRCRAFT PRODUCTS
913-17 Valley St., Dayton 5, Ohio



This is the Roto-Master 600

A single flare can be made on eight sizes of tubing from 1/8 to 3/4 in. in copper, aluminum and mild steel with this new hand tool. It also applies to double-lap and flare copper and aluminum tube from 3/16 to 3/4 inch, all dimensions on the outside diameter. The tool employs two sets of interchangeable powdered-metal blocks, each set carrying four tube sizes. These blocks apply inward through the base of the main housing where they are held in position with a screw clamp operating in from one end.

Forming dies for double-lap flaring are carried in a rotating turret in the body of the tool. A cone-shaped die is also included in this turret. The dies are brought into position and a compression screw at the top of the housing is operated first to make the beginning lap and then to complete the flare for the double lap design or, employing the cone only, to make a single-lap flare. In the latter case the tube is positioned prior to clamping against a stop that is slid in by moving a spring-backed button near one end of the tool housing. After the tube has been positioned this slide is retracted and the flare is made in standard manner.

▼ BREVITY—Identify by IEN - 12059 If you write the maker ▼

CLEANING .. Steam spray machine vaporizes and delivers hot solution

Source: KELITE PRODUCTS INC.
P. O. Box 2917-A, Terminal Annex, Los Angeles 54, Cal.

Company's largest to date

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All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 12060 If you write the maker ▼

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Ezebilt MAINTENANCE SCAFFOLDING

For simpler, more economical scaffolding specify Universal "Ezebilt"—"Up Faster, No Bolts to Master." The basic scaffold parts, with casters, can form a rolling maintenance tower with elevated platform work level, passageway and work clearance. Send for catalog of simple erection.

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This name on the edge of every yard means it is most highly recommended and approved for factory windows and is guaranteed to give you many years of satisfactory service.

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GREEN

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How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know.

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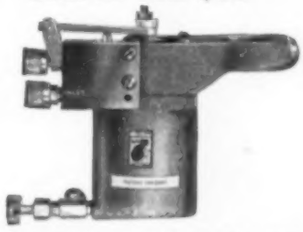

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IN ANY MAN'S LANGUAGE

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STEEL WORK BENCH

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JENKINTOWN 14, PENNSYLVANIA

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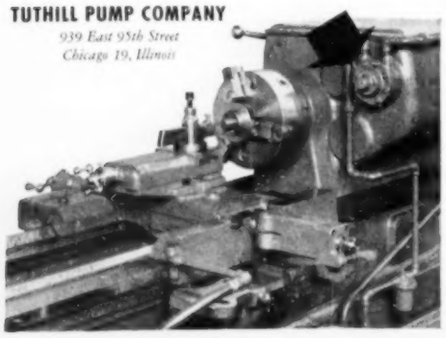

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BREVITY—Identify by IEN - 12074 If you write the maker

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VENTILATING . . Centrifugal blower for exhaust service, 420 to 60,400 cfm.

Type-AE designates new single-inlet centrifugal exhaust blower fabricated from steel plate in welded assembly. The impeller is mounted on a cold-rolled steel shaft supported in self-aligning ball bearings. Drive can be arranged for direct or belt-connected motor on the box-type bearing base at the side of the blower housing.

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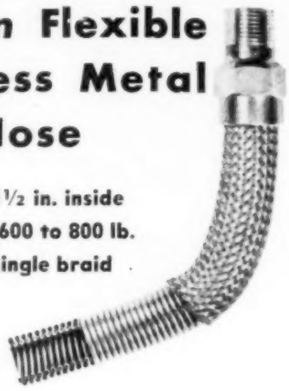

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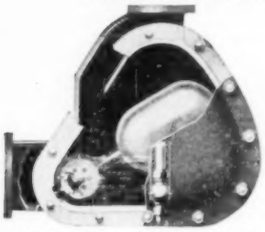
(Continuous Flow Steam Trap)



Multiple Port Construction • Enormous Discharge Capacity • Continuous Discharge • Instant Response

CONTINUOUS DRAINAGE of low pressure condensate and HIGH DISCHARGE CAPACITY, are features of the Cochrane Multiport Drainer that have made these continuous flow steam traps popular the world over.

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Write for Publication 4340

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In Canada: Canadian General Electric Company, Ltd., Toronto

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SINCE 1863

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A PAID NEWS ADVERTISEMENT BY UNIVERSAL LUBRICATING SYSTEMS, INC.

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Model B No. 3000 is recently improved design of the company's Top-Oiler lubricator for internal-combustion engines. As in the original design lubricant is fed in adjustable amount to coat the upper walls of the cylinders, the pistons, the upper rings and the valves. The oil feeds from a glass container by the action of vacuum in the engine. The easily adjusted feed rate is constant regardless of the level of the liquid in the container.

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Affiliate: Sinclair-Collins Valve Company

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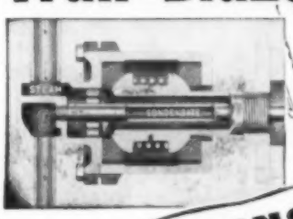
Trail-Blazer . . .



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Company ..... Title .....
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BREVITY—Identify by IEN - 12087 If you write the maker

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SWITCH TO BLACK & DECKER POWER!

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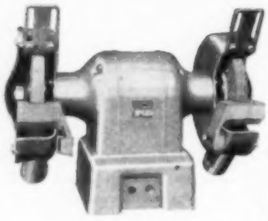
4 models, 6", 8" and 10" wheel diam., ¼ to 1 H.P.



B&D Bench Grinders sharpen chisels, twist drills, and edged tools; handle many types of grinding and metal removal; remove rust; clean dirty, gummy parts; buff and polish plated metal surfaces. Many features to speed up work: dependable B&D-built "constant speed" motors; streamlined design for more work clearance; adjustable U-shaped tool rests for better support; strong steel wheel guards for extra safety. See your nearby B&D Distributor for a demonstration. Write for free catalog to: The Black & Decker Mfg. Co., 615 Pennsylvania Ave., Towson 4, Md.

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PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish I had contact with an organization looking for a plant manager or plant engineer with a mechanical engineering degree and experience in cost maintenance and supervision in processing plants. I am 30 years old and am at present in Ohio." **IEN W-79**

FOLDING . . "I wish I had equipment to fold blueprints 42 in. wide by 50 ft. long into accordion folds that will measure 11 inches deep." **IEN W-80**

NEW BUSINESS . . "I wish I had competent partners for the formation of a corporation to develop and manufacture a complete line of small gas turbines for industrial, automotive and aircraft purposes. I am located in Chicago." **IEN W-81**

PRODUCT DEVELOPMENT . . "I wish we had contact with a man between the ages of 28 and 40 with an engineering education and some industrial marketing experience or knowledge, as well as the imagination and resourcefulness to enable him to visualize the types of products our company could most likely produce with our present facilities. At present we are heavily in defense contracts that will keep us running at capacity for the next two years. However we are concerned about the post-emergency period when defense contracts are no longer available and are anxious to devote the intervening time to the selection and development of products to occupy our facilities. We are located in the Middle West." **IEN W-82**

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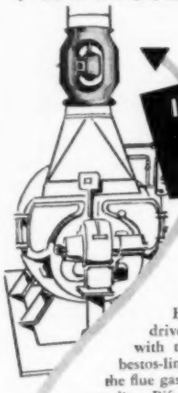

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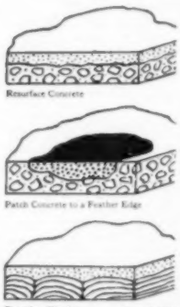

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New York—Wis 7-8474
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